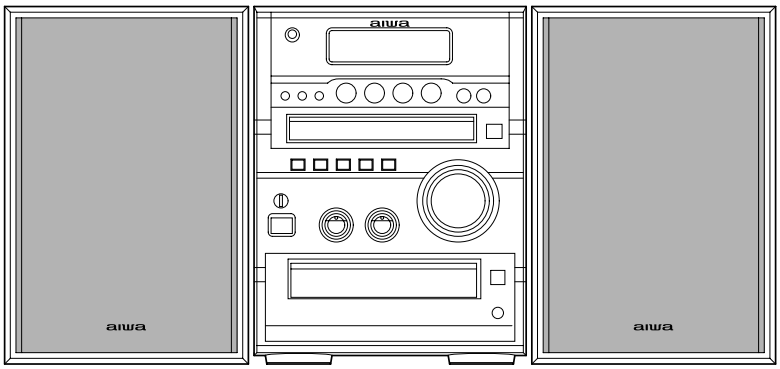
aiwa SERVICE

XR-EM70 K
XR-EM71 EZ



SERVICE MANUAL

COMPACT DISC
STEREO SYSTEM

BASIC TAPE MECHANISM : AZM-1 A4NM
BASIC CD MECHANISM : 3ZG-3 E13NM

SYSTEM	COMPACT DISC	SPEAKER	REMOTE CONTROLLER
XR-EM70	CX-LEM70	SX-LEM70	RC-BAT15
XR-EM71	CX-LEM71		

aiwa

S/M Code No. 09-019-449-6R1

TABLE OF CONTENTS

SPECIFICATIONS 3
PROTECTION OF EYES FROM LASER BEAM DURING SERVICING 4
ELECTRICAL MAIN PARTS LIST ..... 5 ~ 9
TRANSISTOR ILLUSTRATION 10
WIRING – 1 (MAIN / PHONE / OPTICAL) 11
SCHEMATIC DIAGRAM – 1 (MAIN 1 / 2 / PHONE / OPTICAL / HEAD) 12
SCHEMATIC DIAGRAM – 2 (MAIN 2 / 2 : AMP SECTION) 13
WIRING – 2 (FRONT) 14
WIRING – 3 (FL) 15
SCHEMATIC DIAGRAM – 3 (FRONT / FL / DECK / FRAME / DRIVE) 16
WIRING – 4 (CD / CD – DRIVE / CD – LOAD) 17
SCHEMATIC DIAGRAM – 4 (CD / CD – DRIVE / CD – LOAD) 18
WIRING – 5 (TUNER) 19
SCHEMATIC DIAGRAM – 5 (TUNER) 20
WIRING – 6 (PT) 21
SCHEMATIC DIAGRAM – 6 (PT) 22
WIRING – 7 (DECK / FRAME / DRIVE / HEAD) 23
IC BLOCK DIAGRAM 24, 25
FL (HNA – 11MS25) GRID ASSIGNMENT AND ANODE CONNECTION 26
IC DESCRIPTION ..... 27 ~ 32
ADJUSTMENT (TUNER / DECK / CD / FL) ..... 33 ~ 39
CD TEST MODE 40
MECHANICAL EXPLODED VIEW 1 / 1 41
MECHANICAL PARTS LIST 1 / 1 42
TAPE MECHANISM EXPLODED VIEW 1 / 2 43
TAPE MECHANISM PARTS LIST 1 / 2 44
TAPE MECHANISM EXPLODED VIEW 2 / 2 45
TAPE MECHANISM PARTS LIST 2 / 2 46
CD MECHANISM EXPLODED VIEW 1 / 2 47
CD MECHANISM PARTS LIST 1 / 2 48
CD MECHANISM EXPLODED VIEW 2 / 2 49
CD MECHANISM PARTS LIST 2 / 2 49
GENERAL SPEAKER DISASSEMBLY INSTRUCTIONS (FOR REFERENCE) 50
SPEAKER PARTS LIST <SX – LEM70 (YJMN)> 51
ACCESSORIES / PACKAGE LIST 51

SPECIFICATIONS

MAIN UNIT CX-LEM70 (K) / CX-LEM71 (EZ)

TUNER

FM tuning range	87.5 MHz to 108 MHz
FM usable sensitivity (IHF)	16.8 dBf
FM antenna terminal	75 ohms (unbalanced)
MW tuning range	531 kHz to 1602 kHz (9 kHz step) 530 kHz to 1710 kHz (10 kHz step)
MW usable sensitivity	350 µV/m
LW tuning range	144 kHz to 290 kHz
LW usable sensitivity	1400 µV/m
MW/LW antenna	Loop antenna

AMPLIFIER

Power output	Rated: 28 W + 28 W (6 ohms, T.H.D. 1%, 1 kHz/DIN 45500) Reference: 35 W + 35 W (6 ohms, T.H.D. 10 %, 1 kHz/DIN 45324) EZ: DIN MUSIC POWER 75 W + 75 W
Input	AUX IN: 700 mV
Outputs	SPEAKERS: 6 ohms or more PHONES: 32 ohms or more DIGITAL OUT (OPTICAL) jack

CASSETTE DECK

Track format	4 tracks, 2 channels stereo
Frequency response	50 Hz - 15000 Hz
Recording system	AC bias
Heads	Recording/playback X 1, erase X 1

CD PLAYER

Laser	Semiconductor laser (λ = 780 nm)
D/A converter	1 bit dual
Signal-to-noise ratio	88 dB (1 kHz, 0 dB)
Harmonic distortion	Unmeasurable (1 kHz, 0 dB)
Wow and flutter	Unmeasurable

GENERAL

Power requirements	230 V AC, 50 Hz
Power consumption	60 W
Power consumption in standby mode	With ECO mode on or auto: 0.8 W With ECO mode off: 11.1 W
Dimensions (W x H x D)	191.5 x 249.0 x 389.0 mm
Weight	5.3 kg

SPEAKER SYSTEM SX-LEM70

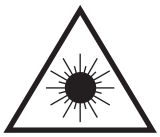
Speaker system	2 way, bass reflex (magnetic shielded)
Speaker units	Woofer: 120 mm cone Tweeter: 25 mm dome
Impedance	6 ohms
Dimensions (W x H x D)	155 x 250 x 218 mm
Weight	2.4 kg

• Design and specifications are subject to change without notice.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!!
WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserståling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!
Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saataa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

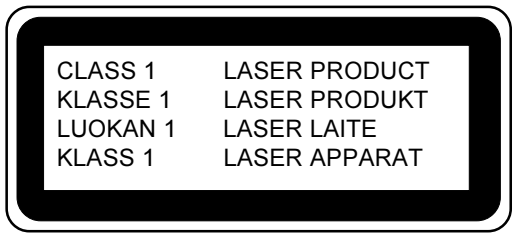
VARNING!
Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herin may result in hazardous radiation exposure.

ATTENTION
L'utillisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL
Usynlig laserståling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.



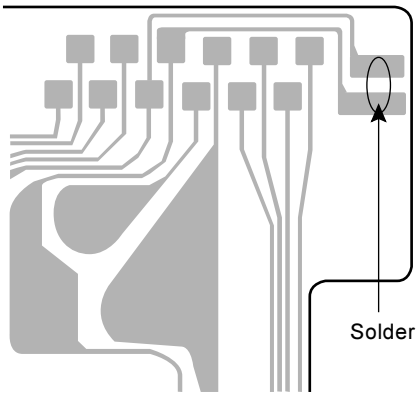
Precaution to replace Optical block

(KSS-213F)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in right figure.

CD PICK-UP Assy PWB



ELECTRICAL MAIN PARTS LIST

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-020-454-010		IC,DN6851
	87-A21-831-010		IC,SPS-422-1-F1
	8B-CLX-610-010		C-IC,LC876564V-5Y22
	87-A20-455-010		IC,HA12211
	87-A22-112-040		C-IC,BD3861FS
	87-017-825-010		IC,GP1F32T
	87-A20-446-010		C-IC,LA9241ML
	87-A21-365-010		IC,NJM7808FA(A)
	87-017-917-080		IC,BU4066BCF
	87-A20-445-010		IC,BA5936S
	87-A21-319-010		C-IC,LC78622NE
	87-A21-695-010		IC,LA1845L
	87-A20-440-040		C-IC,BU1920FS<EZ>
	87-A21-928-010		IC,LC72131D-N
TRANSISTOR			
	87-A30-435-040		C-TR,DTC144EKA
	87-A30-073-080		C-TR,RT1N 141C
	89-112-965-080		TR,2SA1296GR
	87-A30-495-080		TR,2SA1981Y
	89-406-555-080		TR,2SD655E
	87-A30-075-080		C-TR,2SA1235F
	87-A30-484-080		C-TR,KRA102S
	87-A30-087-080		C-FET,2SK2158
	87-A30-076-080		C-TR,2SC3052F
	89-322-405-680		TR,2SC2240(GR/BL)
	87-A30-306-010		TR,2SB1677
	87-A30-307-010		TR,2SD2619
	87-A30-268-040		C-TR,2SA1514K(S)
	87-A30-119-040		C-TR,2SC3906K R
	87-A30-186-010		FET,2SK3053
	87-A30-455-040		C-TR,DTA144EKA
	87-A30-105-080		C-TR,RT1P 441C
	87-026-610-080		TR,KTC3198GR
	87-A30-494-080		TR,2SA1980G
	89-213-702-010		TR,2SB1370E
	87-A30-521-080		C-TR,2SC5345SF/S(O)
	87-A30-489-080		C-TR,KRA107S
	87-A30-060-080		C-TR,KTC3875GR<EZ>
	89-503-602-080		C-FET,2SK360E
	87-A30-664-080		C-TR,2SC2620B
	87-A30-086-040		C-TR,CSD1306E
	87-A30-234-080		TR,CSC4115BC
DIODE			
	87-A40-291-080		DIODE,1N4148 (CPT)
	87-017-978-080		DIODE,1N4003
	87-A40-270-080		C-DIODE,MC2838
	87-A40-269-080		C-DIODE,MC2836
	87-A40-455-080		DIODE,RL203 GW
	87-A40-747-080		ZENER,UZ5.1BSB
	87-A40-749-080		ZENER,UZ5.6BSB
	87-A40-764-080		ZENER,UZ10BSC
	87-020-465-080		DIODE,1SS133 (110MA)
	87-A40-760-080		ZENER,UZ9.1BSA
	87-A40-455-090		DIODE,RL203 GW
	87-A40-553-080		DIODE,1N4003 LES
	87-A40-748-080		ZENER,UZ5.6BSA
	87-A40-777-080		ZENER,UZ30BSB
	87-A40-763-080		ZENER,UZ10BSB
	87-017-149-080		ZENER,HZS6A2L
MAIN C.B			
C101	87-012-274-080		C-CAP,U 1000P-50 B
C102	87-012-274-080		C-CAP,U 1000P-50 B
C103	87-A12-091-080		CAP,E 10-50 SMG
C104	87-A12-091-080		CAP,E 10-50 SMG
C107	87-A12-091-080		CAP,E 10-50 SMG
C108	87-A12-091-080		CAP,E 10-50 SMG
C109	87-012-195-080		C-CAP,U 100P-50CH
C110	87-012-195-080		C-CAP,U 100P-50CH
C111	87-A12-092-080		CAP,E 22-50 SMG
C112	87-A12-092-080		CAP,E 22-50 SMG
C113	87-012-195-080		C-CAP,U 100P-50CH
C114	87-012-195-080		C-CAP,U 100P-50CH
C117	87-A12-317-080		C-CAP,U 0.1-50 ZF
C118	87-A12-317-080		C-CAP,U 0.1-50 ZF
C119	87-012-286-080		CAP, U 0.01-25
C120	87-012-286-080		CAP, U 0.01-25
C123	87-010-177-080		C-CAP,S 820P-50 SL
C124	87-010-177-080		C-CAP,S 820P-50 SL
C127	87-012-195-080		C-CAP,U 100P-50CH
C128	87-012-195-080		C-CAP,U 100P-50CH
C131	87-010-831-080		C-CAP,U,0.1-16F
C133	87-012-282-080		CAP, U 4700P-50
C140	87-012-278-080		C-CAP,U 2200P-50 B
C186	87-010-759-080		C-CAP,U, 0.1-25F
C187	87-A12-077-080		CAP,E 33-35 SMG
C188	87-A12-077-080		CAP,E 33-35 SMG
C189	87-012-195-080		C-CAP,U 100P-50CH
C190	87-012-195-080		C-CAP,U 100P-50CH
C303	87-012-268-080		C-CAP,U 330P-50 B
C304	87-012-268-080		C-CAP,U 330P-50 B
C307	87-010-759-080		C-CAP,U, 0.1-25F
C311	87-010-787-080		CAP, U 0.022-25
C312	87-010-787-080		CAP, U 0.022-25
C313	87-A12-071-080		CAP,E 47-25 SMG
C314	87-A12-071-080		CAP,E 47-25 SMG
C315	87-012-276-080		C-CAP, U 1500P-50 B
C316	87-012-276-080		C-CAP, U 1500P-50 B
C321	87-A10-025-080		C-CAP,U 0.22-16Z F
C322	87-A10-025-080		C-CAP,U 0.22-16Z F
C324	87-A12-071-080		CAP,E 47-25 SMG
C325	87-A12-057-080		CAP,E 330-6.3 SMG
C327	87-A12-090-080		CAP,E 4.7-50 SMG
C328	87-A12-090-080		CAP,E 4.7-50 SMG
C332	87-010-759-080		C-CAP,U, 0.1-25F
C335	87-A12-087-080		CAP,E 1-50 SMG
C336	87-A12-087-080		CAP,E 1-50 SMG
C337	87-010-759-080		C-CAP,U, 0.1-25F
C340	87-010-759-080		C-CAP,U, 0.1-25F
C341	87-010-759-080		C-CAP,U, 0.1-25F
C342	87-A12-070-080		CAP,E 33-25 SMG
C343	87-012-280-080		CAP, U 3300P-50
C344	87-012-286-080		CAP, U 0.01-25
C345	87-012-188-080		C-CAP,U 47P-50 CH
C346	87-012-286-080		CAP, U 0.01-25
C351	87-012-270-080		CAP, U 470P-50
C352	87-012-270-080		CAP, U 470P-50
C354	87-012-271-080		CAP, U 560P-50
C355	87-012-274-080		CHIP CAP,U 1000P-50B
C356	87-A12-071-080		CAP,E 47-25 SMG
C357	87-012-286-080		CAP, U 0.01-25
C358	87-012-279-080		C-CAP,U 2700P-50 B
C359	87-012-279-080		C-CAP,U 2700P-50 B
C360	87-012-279-080		C-CAP,U 2700P-50 B
C368	87-A10-781-080		C-CAP,U 0.15-10 KB
C369	87-A10-781-080		C-CAP,U 0.15-10 KB
C370	87-010-759-080		C-CAP,U, 0.1-25F
C371	87-012-282-080		C-CAP,U 4700P-50 B
C372	87-012-282-080		C-CAP,U 4700P-50 B
C378	87-010-759-080		C-CAP,U, 0.1-25F
C381	87-012-337-080		C-CAP,U 56P-50 J CH
C382	87-012-337-080		C-CAP,U 56P-50 J CH
C388	87-012-199-080		CAP 220P

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C391	87-010-787-080		C-CAP,U 0.022-25 KB
C403	87-010-759-080		C-CAP,U, 0.1-25F
C409	87-012-282-080		CAP, U 4700P-50
C422	87-016-459-080		CAP,E 470-10 M SMG
C426	87-A12-088-080		CAP,E 2.2-50 SMG
C427	87-A12-088-080		CAP,E 2.2-50 SMG
C439	87-A10-304-080		CAP,M 0.056-50 J
C440	87-A10-304-080		CAP,M 0.056-50 J
C441	87-A10-307-080		CAP,M 0.1-50 J
C442	87-A10-307-080		CAP,M 0.1-50 J
C443	87-010-785-080		C-CAP,U0.015-25BK
C444	87-010-785-080		C-CAP,U0.015-25BK
C451	87-012-275-080		C-CAP,U 1200P-50 KB
C452	87-012-275-080		C-CAP,U 1200P-50 KB
C460	87-A12-087-080		CAP,E 1-50 SMG
C461	87-A12-087-080		CAP,E 1-50 SMG
C462	87-A12-087-080		CAP,E 1-50 SMG
C463	87-A12-087-080		CAP,E 1-50 SMG
C464	87-A12-065-080		CAP,E 33-10 SMG
C465	87-012-271-080		C-CAP,U 560P-50 KB
C466	87-012-271-080		C-CAP,U 560P-50 KB
C467	87-012-274-080		C-CAP,U 1000P-50 KB
C468	87-012-274-080		C-CAP,U 1000P-50 KB
C470	87-012-274-080		C-CAP,U 1000P-50 KB
C471	87-012-274-080		C-CAP,U 1000P-50 KB
C472	87-A12-471-080		C-CAP,U 1000P-50 J SL
C473	87-010-759-080		C-CAP,U, 0.1-25F
C474	87-012-278-080		C-CAP,U 2200P-50 KB
C475	87-012-278-080		C-CAP,U 2200P-50 KB
C481	87-A12-090-080		CAP,E 4.7-50 SMG
C482	87-A12-090-080		CAP,E 4.7-50 SMG
C483	87-A12-088-080		CAP,E 2.2-50 SMG
C484	87-A12-088-080		CAP,E 2.2-50 SMG
C485	87-012-282-080		CAP, U 4700P-50
C486	87-012-282-080		CAP, U 4700P-50
C487	87-010-785-080		C-CAP,U0.015-25BK
C488	87-010-785-080		C-CAP,U0.015-25BK
C489	87-010-785-080		C-CAP,U0.015-25BK
C490	87-010-785-080		C-CAP,U0.015-25BK
C495	87-A12-087-080		CAP,E 1-50 SMG
C496	87-A12-087-080		CAP,E 1-50 SMG
C497	87-A12-087-080		CAP,E 1-50 SMG
C498	87-A12-087-080		CAP,E 1-50 SMG
C503	87-010-759-080		C-CAP,U, 0.1-25F
C504	87-010-759-080		C-CAP,U, 0.1-25F
C505	87-010-759-080		C-CAP,U, 0.1-25F
C506	87-010-759-080		C-CAP,U, 0.1-25F
C509	87-010-759-080		C-CAP,U, 0.1-25F
C510	87-010-759-080		C-CAP,U, 0.1-25F
C511	87-010-759-080		C-CAP,U, 0.1-25F
C512	87-010-759-080		C-CAP,U, 0.1-25F
C519	87-A10-520-000		CAP,E 3300-35 M SMG
C520	87-A10-520-000		CAP,E 3300-35 M SMG
C521	87-010-928-000		CAP,E 4700-25 M SMG
C522	87-A10-011-090		CAP,E 2200-25 SMG
C525	87-A10-918-080		CAP,E 100-16 SMG
C526	87-A10-918-080		CAP,E 100-16 SMG
C530	87-A12-079-080		CAP,E 100-35 SMG
C531	87-A12-062-080		CAP,E 100-10 SMG
C532	87-012-286-080		CAP, U 0.01-25
C534	87-A12-072-080		CAP,E 100-25 SMG
C535	87-010-367-040		CAP,E 4.7-25 M BP SRA
C536	87-A12-067-080		CAP,E 330-16 SMG
C538	87-012-282-080		CAP, U 4700P-50
C539	87-012-278-080		C-CAP,U 2200P-50 B
C540	87-A12-062-080		CAP,E 100-10 SMG
C541	87-A12-079-080		CAP,E 100-35 SMG
C545	87-010-831-080		C-CAP,U,0.1-16F
C546	87-A12-064-080		CAP,E 1000-10 SMG
C547	87-010-831-080		C-CAP,U,0.1-16F

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C560	87-A12-089-080		CAP,E 3.3-50 SMG
C561	87-A12-071-080		CAP,E 47-25 SMG
C861	87-010-405-080		CAP, ELECT 10-50V<EZ>
C862	87-010-759-080		C-CAP,U, 0.1-25F<EZ>
C863	87-012-199-080		CAP 220P<EZ>
C864	87-012-199-080		CAP 220P<EZ>
C865	87-012-274-080		CHIP CAP,U 1000P-50B<EZ>
C866	87-012-270-080		CAP, U 470P-50<EZ>
C867	87-012-286-080		CAP, U 0.01-25<EZ>
C868	87-010-405-080		CAP, ELECT 10-50V<EZ>
C869	87-012-286-080		CAP, U 0.01-25<EZ>
C870	87-012-184-080		C-CAP,U 33P-50 CH<EZ>
C871	87-012-180-080		C-CAP,U 22P-50 CH<EZ>
C872	87-012-280-080		CAP, U 3300P-50<EZ>
C873	87-012-280-080		CAP, U 3300P-50<EZ>
CN230	84-722-638-010		CONN,5P H WHT EH
CN301	87-A60-625-010		CONN,8P V 2MM JMT
CN402	87-A60-189-010		CONN,16P V TUC-P16P-B1
CN403	87-099-195-010		CONN,7P V BLK 6216
CN410	87-099-719-010		CONN,30P TYK-B(X)
CN502	87-A90-510-010		HLDR,WIRE 2.5-9P
CNA201	8B-CJZ-640-010		CONN ASSY,9P TID-A(200)
FB405	87-A90-896-080		F-BEAD, 035600STY7
FB406	87-A90-896-080		F-BEAD, 035600STY7
J404	87-A61-711-010		JACK,PIN 2P MSP-242V-01 PBSN
JW432	87-A90-896-080		F-BEAD, 035600STY7
JW433	87-A90-896-080		F-BEAD, 035600STY7
L301	87-A50-049-010		COIL,TRAP 85K(COI)
L302	87-A50-049-010		COIL,TRAP 85K(COI)
L351	87-007-342-010		COIL,OSC 85K BIAS
L402	87-A50-610-010		COIL,1UH K(MDEC)
L403	87-A50-610-010		COIL,1UH K(MDEC)
L861	87-005-847-080		COIL,2.2UH(CECS)<EZ>
L871	87-A50-027-010		COIL,1 POLE MPX(TOK)
L872	87-A50-027-010		COIL,1 POLE MPX(TOK)
R129	87-A00-258-080		RES,M/F 0.22-1W J
R130	87-A00-258-080		RES,M/F 0.22-1W J
R131	87-A00-258-080		RES,M/F 0.22-1W J
R132	87-A00-258-080		RES,M/F 0.22-1W J
SFR351	87-024-436-080		SFR,47K RH063EC
SFR352	87-024-436-080		SFR,47K RH063EC
TH101	87-A91-042-080		C-THMS,100K 55001
TH102	87-A91-042-080		C-THMS,100K 55001
TM401	87-A61-712-010		TERMINAL, 4P SP MSP-324V1-01
X862	87-A70-307-010		VIB,XTAL 4.332MHZ CSA-309ST<EZ>

FRONT C.B

C50	87-012-274-080		CHIP CAP,U 1000P-50B
C51	87-A12-091-040		CAP,E 10-50 SMG
C52	87-A12-310-080		C-CAP,U 0.01-50 K B
C53	87-A12-310-080		C-CAP,U 0.01-50 K B
C54	87-A12-310-080		C-CAP,U 0.01-50 K B
C55	87-A12-310-080		C-CAP,U 0.01-50 K B
C56	87-A12-310-080		C-CAP,U 0.01-50 K B
C57	87-A12-310-080		C-CAP,U 0.01-50 K B
C60	87-A10-025-080		C-CAP,U 0.22-16 ZF
CN50	87-099-040-010		CONN,23P H BLK 6216
CN53	87-099-212-010		CONN,05P V BLK 6216
CNA52	8B-CLX-617-010		CONN ASSY,9P DECK PL-CONT
D50	87-A41-062-040		LED,LTL-1CHEE-012A RED
D51	87-A41-062-040		LED,LTL-1CHEE-012A RED
D52	87-A41-062-040		LED,LTL-1CHEE-012A RED
D53	87-A41-062-040		LED,LTL-1CHEE-012A RED
D54	87-A41-062-040		LED,LTL-1CHEE-012A RED
FC050	88-923-091-110		FF-CABLE,23P 1.25 90MM
FC053	88-905-231-110		FF-CABLE,5P 1.25 230MM
S50	87-A91-024-180		SW-TACT KSHG611BT
S51	87-A91-024-180		SW-TACT KSHG611BT
S52	87-A91-024-180		SW-TACT KSHG611BT

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
S53	87-A91-024-180		SW-TACT KSHG611BT
S54	87-A91-024-180		SW-TACT KSHG611BT
S55	87-A91-024-180		SW-TACT KSHG611BT
S56	87-A91-024-180		SW-TACT KSHG611BT
S57	87-A91-024-180		SW-TACT KSHG611BT
S58	87-A91-024-180		SW-TACT KSHG611BT
S59	87-A91-024-180		SW-TACT KSHG611BT
S60	87-A91-024-180		SW-TACT KSHG611BT
S61	87-A91-024-180		SW-TACT KSHG611BT
S62	87-A91-024-180		SW-TACT KSHG611BT
S63	87-A91-024-180		SW-TACT KSHG611BT
S64	87-A91-024-180		SW-TACT KSHG611BT
S65	87-A91-024-180		SW-TACT KSHG611BT
S66	87-A91-024-180		SW-TACT KSHG611BT
S67	87-A91-687-010		SW,RTRY RE012104PV-VOL
S68	87-A91-687-010		SW,RTRY RE012104PV-VOL
S69	87-A92-291-010		SW,RTRY RE121PVB25FINB1-24E

CD C.B

C501	87-A12-062-040		CAP,E 100-10 SMG
C502	87-010-831-080		C-CAP,U,0.1-16F
C503	87-A12-062-040		CAP,E 100-10 SMG
C504	87-A12-062-040		CAP,E 100-10 SMG
C505	87-A12-062-040		CAP,E 100-10 SMG
C506	87-010-831-080		C-CAP,U,0.1-16F
C507	87-010-831-080		C-CAP,U,0.1-16F
C508	87-A11-058-080		C-CAP,U 0.22-10 K B
C509	87-A11-070-080		C-CAP,U 0.033-16 K B
C510	87-012-268-080		C-CAP,U 330P-50 B
C511	87-A10-828-080		C-CAP,U 0.33-6.3 K B
C512	87-010-785-080		C-CAP,U0.015-25BK
C513	87-A10-781-080		C-CAP,U 0.15-10 K B
C514	87-012-278-080		CAP, U 2200P-50
C515	87-010-787-080		C-CAP,U 0.022-25 K B
C516	87-A10-504-080		C-CAP,U 0.047-16 K B
C517	87-A10-260-080		C-CAP,U 0.1-16 K B
C518	87-012-197-080		C-CAP,U 150P-50 J CH
C519	87-012-286-080		CAP, U 0.01-25
C520	87-012-282-080		CAP, U 4700P-50
C521	87-012-266-080		C-CAP,U 220P-50 B
C522	87-A11-058-080		C-CAP,U 0.22-10 K B
C523	87-012-280-080		CAP, U 3300P-50
C524	87-A11-049-080		C-CAP,U 1-6.3 K B
C525	87-A12-066-040		CAP,E 47-16 SME
C527	87-012-176-080		CAP 15P
C529	87-012-280-080		CAP, U 3300P-50
C530	87-012-195-080		C-CAP,U 100P-50 CH
C531	87-010-831-080		C-CAP,U,0.1-16F
C532	87-012-274-080		CHIP CAP,U 1000P-50B
C533	87-A12-090-040		CAP,E 4.7-50 SMG
C534	87-010-831-080		C-CAP,U,0.1-16F
C535	87-A12-066-040		CAP,E 47-16 SMG
C536	87-010-831-080		C-CAP,U,0.1-16F
C537	87-A12-091-040		CAP,E 10-50 SMG
C538	87-A11-070-080		C-CAP,U 0.033-16 K B
C539	87-A11-049-080		C-CAP,U 1-6.3 K B
C540	87-A10-781-080		C-CAP,U 0.15-10 K B
C541	87-A12-062-040		CAP,E 100-10 SMG
C542	87-012-274-080		CHIP CAP,U 1000P-50B
C551	87-010-831-080		C-CAP,U,0.1-16F
C552	87-010-831-080		C-CAP,U,0.1-16F
C581	87-016-459-040		CAP,E 470-10 SMG
C582	87-010-831-080		C-CAP,U,0.1-16F
C583	87-A12-066-040		CAP,E 47-16 SMG
C584	87-010-831-080		C-CAP,U,0.1-16F
C601	87-010-831-080		C-CAP,U,0.1-16F
C602	87-012-195-080		C-CAP,U 100P-50CH
C603	87-012-195-080		C-CAP,U 100P-50CH
C604	87-012-195-080		C-CAP,U 100P-50CH
C605	87-012-195-080		C-CAP,U 100P-50CH
C606	87-012-195-080		C-CAP,U 100P-50CH
C611	87-010-831-080		C-CAP,U,0.1-16F
C612	87-010-831-080		C-CAP,U,0.1-16F
C613	87-010-831-080		C-CAP,U,0.1-16F
C614	87-010-831-080		C-CAP,U,0.1-16F
C621	87-010-831-080		C-CAP,U,0.1-16F
C651	87-A12-063-040		CAP,E 220-10 SMG
C652	87-010-831-080		C-CAP,U,0.1-16F
C653	87-016-459-040		CAP,E 470-10 SMG
C654	87-010-831-080		C-CAP,U,0.1-16F
C655	87-A12-069-040		CAP,E 22-25 SMG
C656	87-010-831-080		C-CAP,U,0.1-16F
C658	87-010-831-080		C-CAP,U,0.1-16F
C659	87-010-831-080		C-CAP,U,0.1-16F
C660	87-010-831-080		C-CAP,U,0.1-16F
C661	87-012-266-080		C-CAP,U 220P-50 B
C662	87-012-197-080		C-CAP,U 150P-50 CH
C664	87-010-831-080		C-CAP,U,0.1-16F
C665	87-012-172-080		C-CAP,U 10P-50 D CH
C666	87-012-172-080		C-CAP,U 10P-50 D CH
C667	87-012-170-080		C-CAP,U 8P-50 D CH
C668	87-A12-090-040		CAP,E 4.7-50 SMG
C669	87-012-286-080		CAP, U 0.01-25
C671	87-012-195-080		C-CAP,U 100P-50CH
C672	87-010-831-080		C-CAP,U,0.1-16F
C673	87-012-274-080		CHIP CAP,U 1000P-50 K B
C674	87-010-831-080		C-CAP,U,0.1-16F
C681	87-012-270-080		CHIP CAP,U 470P-50B
C682	87-012-270-080		CHIP CAP,U 470P-50B
C683	87-A12-088-040		CAP,E 2.2-50 SMG
C684	87-A12-088-040		CAP,E 2.2-50 SMG
C685	87-012-274-080		C-CAP, U 1000P-50 B
C686	87-012-274-080		C-CAP, U 1000P-50 B
CN501	87-A60-424-010		CONN,16P V TOC-B
CN502	87-099-199-010		CONN,6P 6216 H
CN601	87-A60-077-010		CONN,10P H 9604S-10F
CN602	87-099-200-010		CONN,7P 6216H
CN603	87-099-210-010		CONN,05P H BLK 6216
CNA601	8B-CLX-619-010		CONN ASSY,3P D-OUT
FC501	8B-CLX-618-010		FF-CABLE,16P 150MMCD-P
FC502	88-906-081-110		FF-CABLE,6P 1.25 80MM
FC602	88-907-211-110		FF-CABLE,7P 1.25 200MM
FC603	88-905-131-110		FF-CABLE,5P 1.25 130MM
R551	87-022-249-080		CHIP RES,U 27K-1/16W F
R552	87-022-249-080		CHIP RES,U 27K-1/16W F
R553	87-022-249-080		CHIP RES,U 27K-1/16W F
R554	87-022-249-080		CHIP RES,U 27K-1/16W F
R555	87-022-284-080		C-RES,U 68K-1/16W F
R556	87-022-284-080		C-RES,U 68K-1/16W F
R559	87-022-251-080		C-RES U33K 1/16WF
R560	87-022-251-080		C-RES U33K 1/16WF
R563	87-022-288-080		C-RES,U 150K-1/16W F
R564	87-022-288-080		C-RES,U 150K-1/16W F
R687	87-A50-190-080		C-COIL,S BLM21A102S
R688	87-A50-190-080		C-COIL,S BLM21A102S
SFR501	87-024-437-080		SFR100K,RH063EC
X651	87-A70-046-010		VIB,XTAL 16.934MHZ

FL C.B

C101	87-A12-069-040		CAP, ELECT 22-25V SMG
C102	87-A12-069-040		CAP, ELECT 22-25V SMG
C103	87-A12-078-040		CAP,E 47-35 SMG
C104	87-010-831-080		C-CAP,U,0.1-16F
C105	87-010-831-080		C-CAP,U,0.1-16F
C106	87-012-178-080		C-CAP,U 18P-50 CH
C107	87-012-184-080		C-CAP,U 33P-50 CH
C108	87-010-787-080		CAP, U 0.022-25
C109	87-A12-086-080		CAP,E 0.47-50 SMG

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C110	87-010-831-080		C-CAP,U,0.1-16F
C111	87-A12-063-040		CAP,E 220-10 SMG
C112	87-A10-353-080		C-CAP,U0.22-10KB
C113	87-010-831-080		C-CAP,U,0.1-16F
C114	87-010-831-080		C-CAP,U,0.1-16F
CN101	87-099-720-010		CONN,30P TYK-B(P)
CN102	87-A60-077-010		CONN,10P H 9604S-10F
CN103	87-099-761-010		CONN,23P H 9604
FC102	88-910-171-110		FF-CABLE,10P 1.25 170MM
FL101	8B-CLX-611-010		FL,HNA-11MS25
L101	87-A50-657-010		COIL,CLK 9.43MHZ (TOKO)7KLY

TUNER C.B

C772	87-012-286-080		CAP, U 0.01-25
C780	87-012-274-080		C-CAP,U 1000P-50 KB
C786	87-012-286-080		CAP, U 0.01-25
C788	87-012-167-080		C-CAP,U 5P-50 CH
C789	87-A11-228-080		C-CAP,U 0.027-25 K B
C790	87-A11-228-080		C-CAP,U 0.027-25 K B
C791	87-010-831-080		C-CAP,U,0.1-16F
C792	87-012-286-080		CAP, U 0.01-25
C793	87-A10-262-080		C-CAP,U 1-10 Z F
C795	87-012-286-080		CAP, U 0.01-25
C798	87-010-831-080		C-CAP,U,0.1-16F
C799	87-010-982-040		CAP,E 33-25 GAS
C800	87-012-191-080		CHIP CAP 68 PF
C801	87-A10-262-080		C-CAP,U 1-10 Z F
C802	87-010-829-080		CAP, U 0.047-16
C804	87-010-555-040		CAP,E 100-10 GAS
C807	87-A10-463-080		C-CAP,U 0.47-10 Z F
C808	87-A10-262-080		C-CAP,U 1-10 Z F
C809	87-A10-262-080		C-CAP,U 1-10 Z F
C815	87-A10-463-080		C-CAP,U 0.47-10 Z F
C816	87-A10-463-080		C-CAP,U 0.47-10 Z F
C818	87-012-276-080		CAP, CHIP SS 1500 PBK
C821	87-A11-063-080		C-CAP,S 4.7-10 Z F
C822	87-012-270-080		CAP, U 470P-50
C823	87-012-274-080		CHIP CAP,U 1000P-50B
C824	87-A11-063-080		C-CAP,S 4.7-10 Z F
C825	87-A11-317-080		C-CAP,U 0.068U-16 K B
C831	87-010-552-040		CAP,E 22-16 GAS
C837	87-A12-022-080		C-CAP,U 0.22-16 Z F
C842	87-010-831-080		C-CAP,U,0.1-16F
C844	87-012-286-080		CAP, U 0.01-25
C850	87-A10-262-080		C-CAP,U 1-10 Z F
C851	87-012-286-080		CAP, U 0.01-25
C852	87-012-286-080		CAP, U 0.01-25
C853	87-012-286-080		CAP, U 0.01-25
C859	87-010-831-080		C-CAP,U,0.1-16F
C860	87-012-286-080		CAP, U 0.01-25
C901	87-012-162-080		C-CAP,U 1P-50 CK
C902	87-012-165-080		CAP 3P
C903	87-012-164-080		C-CAP,U 2P-50 CK
C904	87-A12-348-080		C-CAP,U 560P-25 J CH
C905	87-012-162-080		C-CAP,U 1P-50 CK
C906	87-012-172-080		CAPACITOR CHIP U 10P CH
C907	87-012-166-080		C-CAP,U 4P-50 CH
C908	87-012-165-080		CAP 3P
C909	86-ZA1-615-080		C-CAP,U 680P-25 J CH
C910	87-012-164-080		C-CAP,U 2P-50 CK
C911	87-012-166-080		C-CAP,U 4P-50 CH
C912	87-012-195-080		C-CAP,U 100P-50CH
C913	86-ZA1-616-080		C-CAP,U 0.01-50 K B (MUR)
C914	86-ZA1-616-080		C-CAP,U 0.01-50 K B (MUR)
C915	86-ZA1-616-080		C-CAP,U 0.01-50 K B (MUR)
C916	86-ZA1-616-080		C-CAP,U 0.01-50 K B (MUR)
C917	87-012-178-080		C-CAP,U 18P-50 CH
C918	87-012-172-080		CAPACITOR CHIP U 10P CH
C919	87-012-184-080		C-CAP,U 33P-50 CH
C920	87-012-184-080		C-CAP,U 33P-50 CH
C921	87-012-180-080		C-CAP,U 22P-50 CH
C922	87-012-174-080		CAP CHIP CERA SS 12P CHJ
C923	86-ZA1-616-080		C-CAP,U 0.01-50 K B (MUR)
C924	87-012-164-080		C-CAP,U 2P-50 CK
C925	87-012-164-080		C-CAP,U 2P-50 CK
C926	86-ZA1-616-080		C-CAP,U 0.01-50 K B (MUR)
C927	87-012-195-080		C-CAP,U 100P-50CH
C942	87-012-172-080		CAPACITOR CHIP U 10P CH
C947	87-012-286-080		CAP, U 0.01-25
C948	87-012-270-080		CAP, U 470P-50
C952	87-012-286-080		CAP, U 0.01-25
C957	87-012-174-080		CAP CHIP CERA SS 12P CHJ
C958	87-012-286-080		CAP, U 0.01-25
C962	87-A10-262-080		C-CAP,U 1-10 Z F
C963	87-010-831-080		C-CAP,U,0.1-16F
C971	87-A12-067-080		CAP,E 330-16 SMG
C972	87-A11-063-080		C-CAP,S 4.7-10 Z F
C973	87-012-286-080		CAP, U 0.01-25
C974	87-012-286-080		CAP, U 0.01-25
C976	87-010-831-080		C-CAP,U,0.1-16F
C979	87-012-195-080		C-CAP,U 100P-50CH
C981	87-010-553-040		CAP,E 47-16 GAS
C982	87-010-831-080		C-CAP,U,0.1-16F
C983	87-A11-132-080		CAP,TC U 0.01-50 K B
C984	87-012-286-080		CAP, U 0.01-25
C985	87-012-195-080		C-CAP,U 100P-50CH
C987	87-012-286-080		CAP, U 0.01-25
C989	87-012-286-080		CAP, U 0.01-25
C990	87-012-195-080		C-CAP,U 100P-50CH
C991	87-012-182-080		C-CAP,U 27P-50 CH
C992	87-012-172-080		CAPACITOR CHIP U 10P CH
C993	87-012-274-080		CHIP CAP,U 1000P-50B
C994	87-012-195-080		C-CAP,U 100P-50CH
C995	87-012-274-080		CHIP CAP,U 1000P-50B
C996	87-012-195-080		C-CAP,U 100P-50CH
C997	87-010-831-080		C-CAP,U,0.1-16F
C998	87-010-553-040		CAP,E 47-16 GAS
C999	87-012-286-080		CAP, U 0.01-25
CF831	87-008-423-010		FLTR,CF SFE10.7MS3G-A
CF832	82-785-747-010		CF,MS2 GHY,R
CN991	87-A60-650-010		CONN,16P H GRY TUC-P16X-C1
D901	87-A41-048-040		C-VARI-CAP,HVM16-03 TL
D902	87-A41-048-040		C-VARI-CAP,HVM16-03 TL
D903	87-A41-048-040		C-VARI-CAP,HVM16-03 TL
J832	87-A61-534-010		TERMINAL,ANT PAL AJ-2021
J940	87-A60-633-010		CONN,2P H 2.5MM JMT
JW959	87-A11-132-080		CAP,TC U 0.01-50 K B
L801	87-A50-694-010		COIL,FM-DET 2 (COILS)
L802	87-A91-551-010		FLTR,PCFJZH-450 L(TOK)
L811	87-005-847-080		COIL,2.2UH(CECS)
L832	87-005-847-080		COIL,2.2UH(CECS)
L901	86-ZA1-612-010		COIL,FM ANT/RF-1-Z
L902	86-ZA1-613-010		COIL,FM ANT/RF-2-Z
L903	87-005-847-080		COIL,2.2UH K CECS
L904	86-ZA1-613-010		COIL,FM ANT/RF-2-Z
L905	86-ZA1-612-010		COIL,FM ANT/RF-1-Z
L906	87-005-847-080		COIL,2.2UH(CECS)
L907	86-ZA1-614-010		COIL,FM OSC-Z
L908	88-ZA1-624-010		COIL,FM IFT 7-6.2 (COILS)
L941	87-A50-020-010		COIL,ANT LW(COI)
L942	87-A50-019-010		COIL,OSC LW(COI)
L951	8B-ZA3-668-010		COIL,AM PACK 2Z(TOK)
R790	87-012-286-080		CAP, U 0.01-25
TC942	87-A91-774-080		TRIMMER,PLY 30P 6.8X5.4 CDYL
X991	87-A70-061-010		VIB,XTAL 4.500MHZ CSA-309

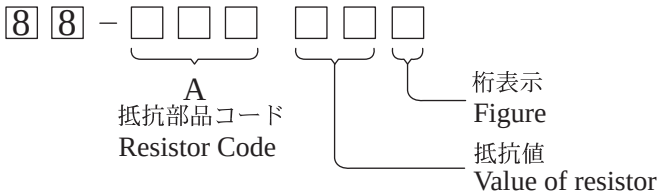
PT C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C251	87-A12-074-080		CAP,E 470-25 SMG
CN201	87-A61-110-010		CONN,9P V TID-A
⚠ PT250	8B-CLX-615-010		PT,EZ BCL-30
⚠ PT251	8B-MA6-675-010		PT,SUB BMA E (VRK)
⚠ RY251	87-A91-418-010		RELAY,AC12V G5PA-1-M
⚠ T250	87-A60-317-010		TERMINAL, 1P MSC
⚠ T251	87-A60-317-010		TERMINAL, 1P MSC
PHONE C.B			
C231	87-010-831-080		C-CAP,U,0.1-16F
C232	87-012-272-080		C-CAP,U 680P-50 B
C233	87-012-272-080		C-CAP,U 680P-50 B
CNA230	8B-CLX-626-010		CONN ASSY,5P V W HP
J231	87-A60-420-010		JACK,3.5 ST (MSC)
OPTICAL C.B			
C401	87-010-759-080		C-CAP,U 0.1-25 ZF
CN408	87-A60-620-010		CONN,3P V 2MM JMT
CD-DRIVE C.B			
CON3	87-A60-086-010		CONN,6P H 6216
M20	87-045-358-010		MOT,RF-310TA 43
M21	87-045-356-010		MOT,RF-310TA 30
SW1	87-A90-042-010		SW,LEAF MSW-17310MVP0
CD-LOAD C.B			
CON6	87-099-210-010		CONN,5P H BLK 6216
M1	87-045-305-010		MOTOR,RF-500TB
SW1	87-036-110-010		SW, MICRO SPPB62
SW2	87-036-110-010		SW, MICRO SPPB62

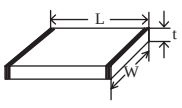
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
DECK C.B			
CON1	87-009-352-010		CONN,9P H WHT PH
SFR1	87-024-581-010		SFR,3.3K H KVSF637A
SOL2	82-ZM3-628-010		SOL ASSY,23SO
SW2	87-A90-248-010		SW,MICRO ESE11SH2CXQ
SW3	87-A90-248-010		SW,MICRO ESE11SH2CXQ
SW4	87-A90-248-010		SW,MICRO ESE11SH2CXQ
SW5	87-A90-248-010		SW,MICRO ESE11SH2CXQ
SW6	87-A90-248-010		SW,MICRO ESE11SH2CXQ
W1	86-ZM4-601-110		RBN-CORD,4P-300MM
FRAME C.B			
S1	87-A90-948-010		SW,LVR 2-1-2 MPU11263MLB0
DRIVE C.B			
CN1	86-NFZ-675-010		CONN,5P H 6216-11H
M1	87-045-305-010		MOT,RF-500TB
S2	87-A91-662-010		SW,PUSH 1-1-1 MPU11244MLB0
W2	8Z-ZG4-614-010		F-CABLE,2P 130MM LED
HEAD C.B			
	85-ZM3-602-010		PWB,FLEX A
CNA301	86-ZM1-605-010		CONN ASSY,AR3

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

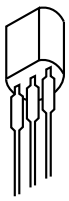
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm) 外形／Form	L	W	t	抵抗コード : A Resistor Code : A
1/16W	1005	± 5%	CJ		1.0	0.5	0.35	104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45	108
1/10W	2125	± 5%	CJ		2	1.25	0.45	118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55	128

TRANSISTOR ILLUSTRATION

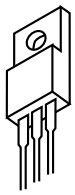


E C B

2SA1296GR
CSC4115BC
KTC3198GR

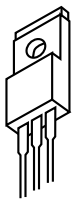
E C B

2SA1980G
2SA1981Y
2SC2240(GR/BL)
2SD655E



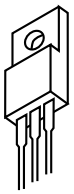
B C E

2SB1677
2SD2619



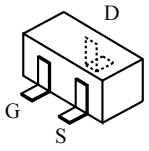
B C E

2SB1370E

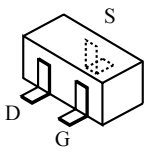


G D S

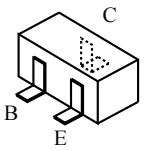
2SK3053



2SK2158



2SK360E



2SA1235F
2SA1514K(S)
2SC2620B
2SC3052F
2SC3906KR
2SC5345SF/S(O)
CSD1306E

DTA144EKA
DTC144EKA
KRA102S
KRA107S
KTC3875GR
RT1N141C
RT1P441C

32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

A B C D E F G H I J K L M N O P Q R S T U

A MAIN C.B

G PHONE C.B

H OPTICAL C.B

TO HEAD C.B CNA301

TO CD C.B CN602 (FC602)

TO TUNER C.B CN991

TO FL C.B CN101

TO MAIN C.B CN230

TO CD C.B CNA601

TO PHONE C.B CNA203

TO PT C.B CN201

J231 PHONES

J404 AUX IN

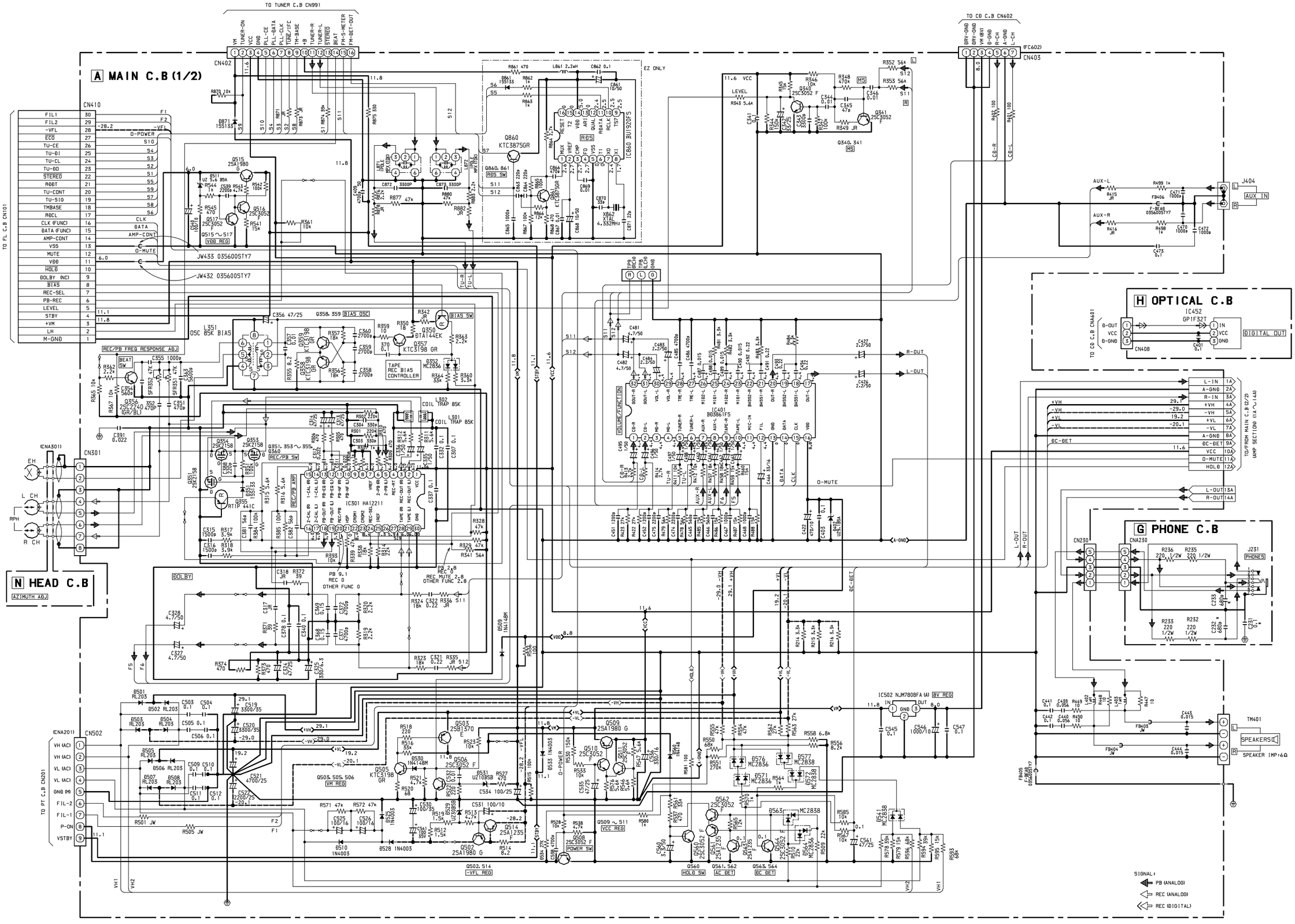
TM401 SPEAKERS

SPEAKER IMP:6Ω

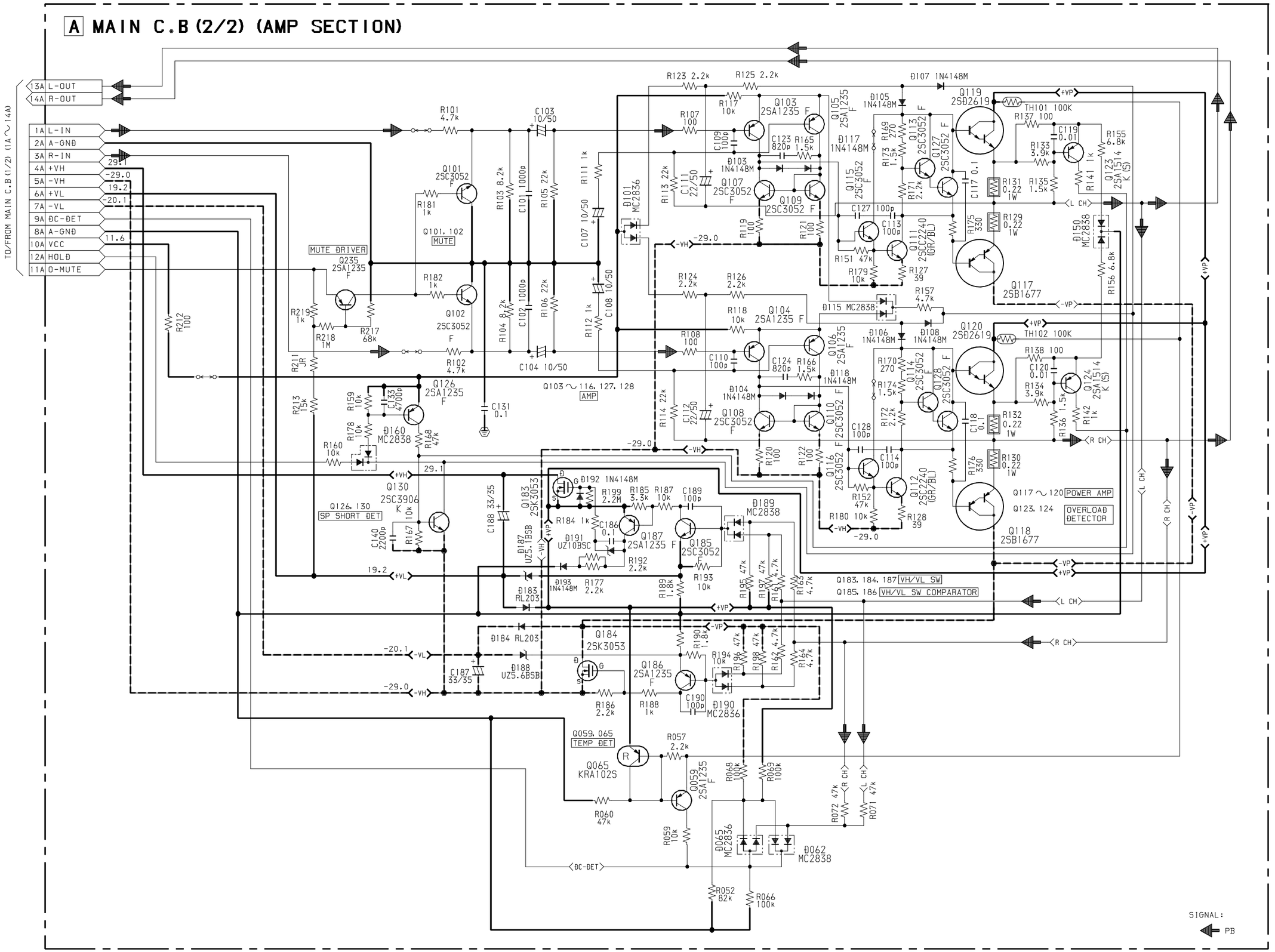
IC452 ĐIGITAL OUT

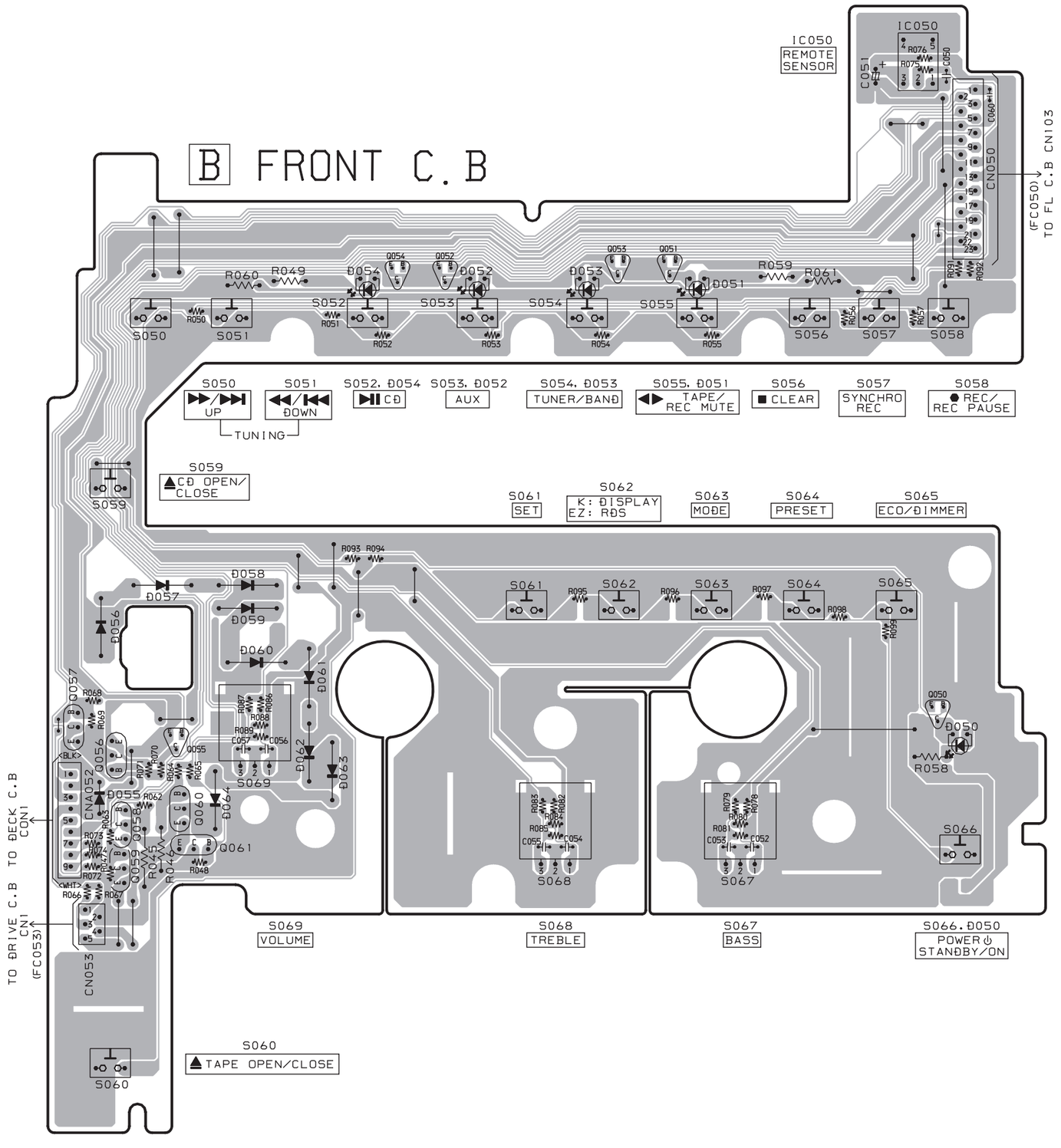
EZ ONLY

SCHEMATIC DIAGRAM – 1 (MAIN 1 / 2 / PHONE / OPTICAL / HEAD)



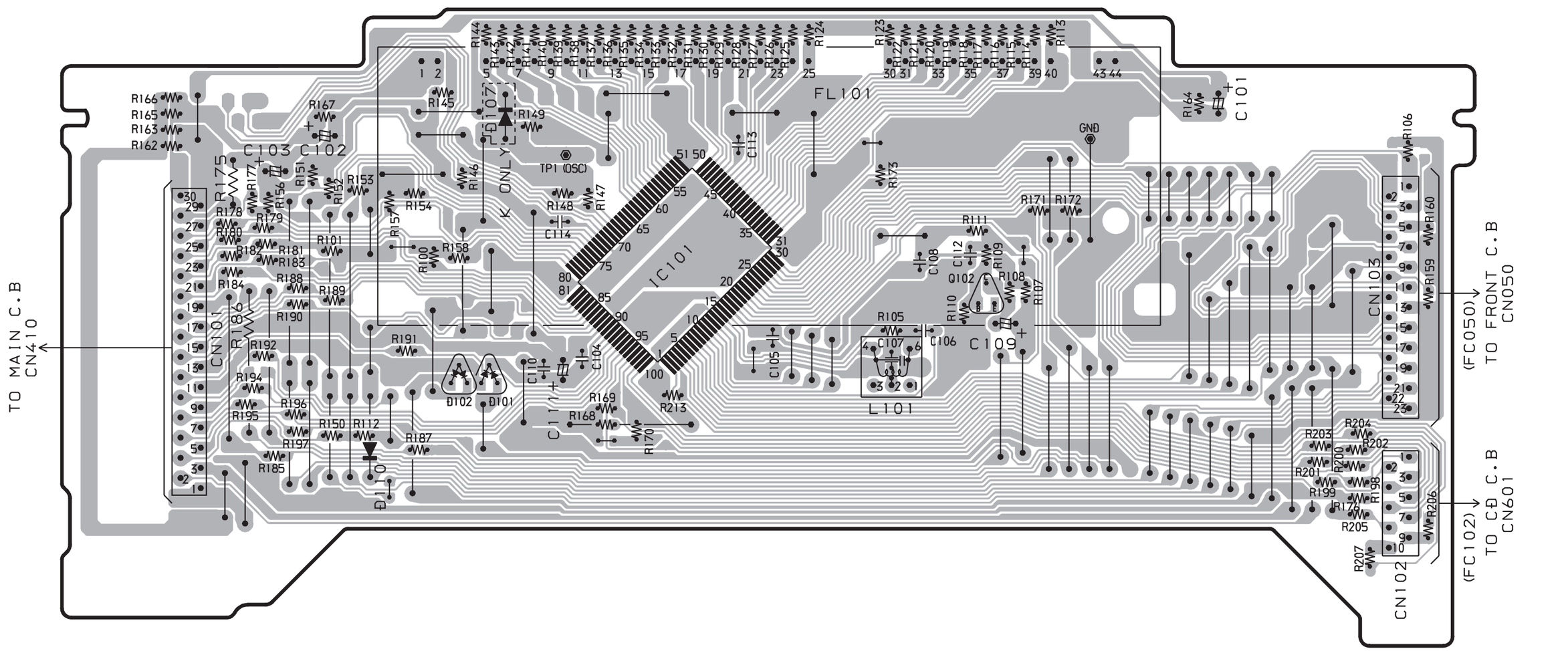
SCHEMATIC DIAGRAM – 2 (MAIN 2 / 2 : AMP SECTION)



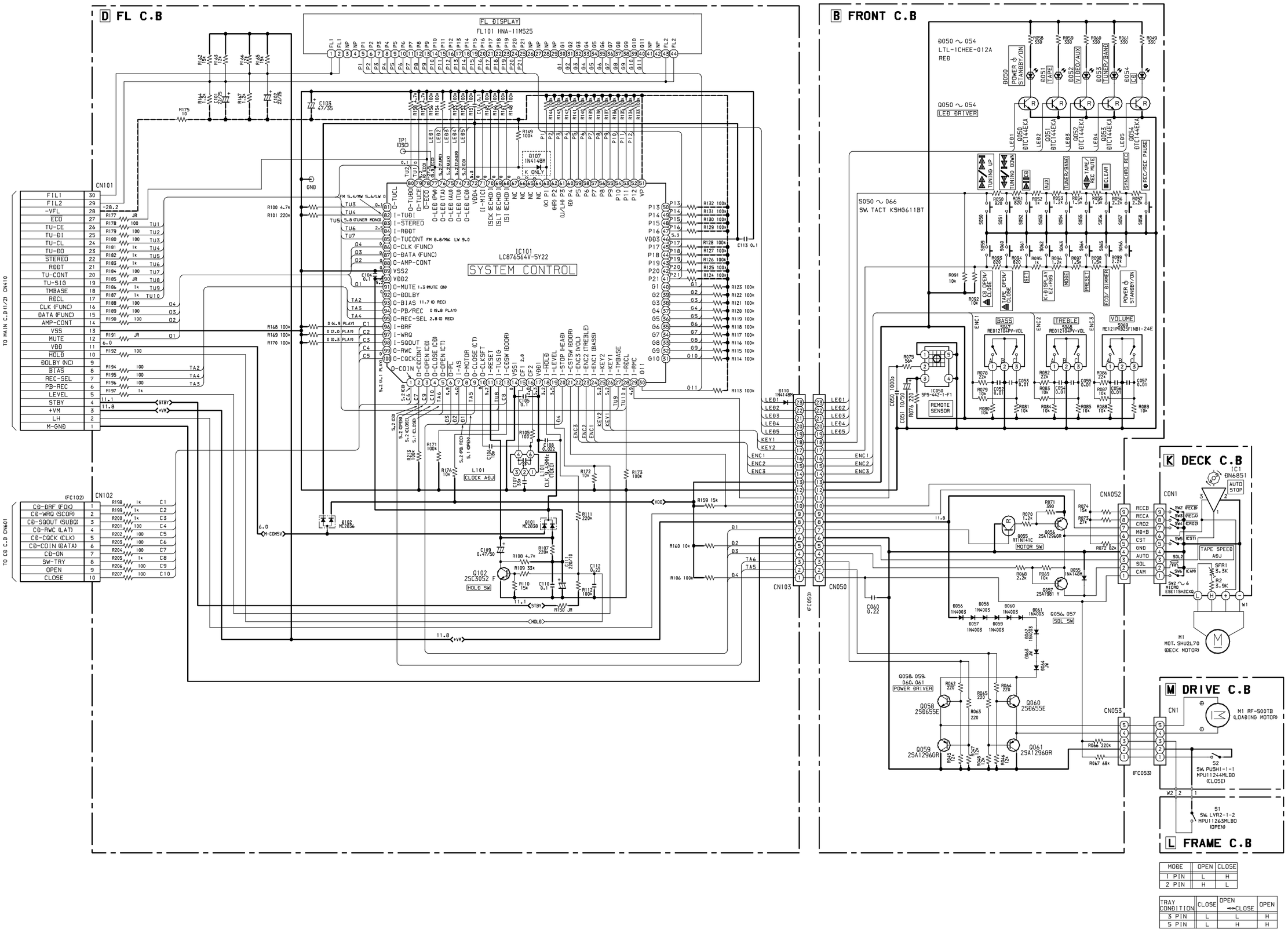

B FRONT C.B
IC050
REMOTE SENSOR
(FC050) TO FL C.B CN103
S050 UP
S051 DOWN
TUNING
S052, D054 CD
S053, D052 AUX
S054, D053 TUNER/BAND
S055, D051 TAPE/ REC MUTE
S056 CLEAR
S057 SYNCHRO REC
S058 REC/ REC PAUSE
S059 CD OPEN/ CLOSE
S061 SET
S062 K: DISPLAY EZ: RDS
S063 MODE
S064 PRESET
S065 ECO/DIMMER
S066, D050 POWER STANDBY/ON
S067 BASS
S068 TREBLE
S069 VOLUME
S060 TAPE OPEN/CLOSE
TO DRIVE C.B CN1 (FC053)
TO DECK C.B CON1

FL C.B

FL101
FL DISPLAY



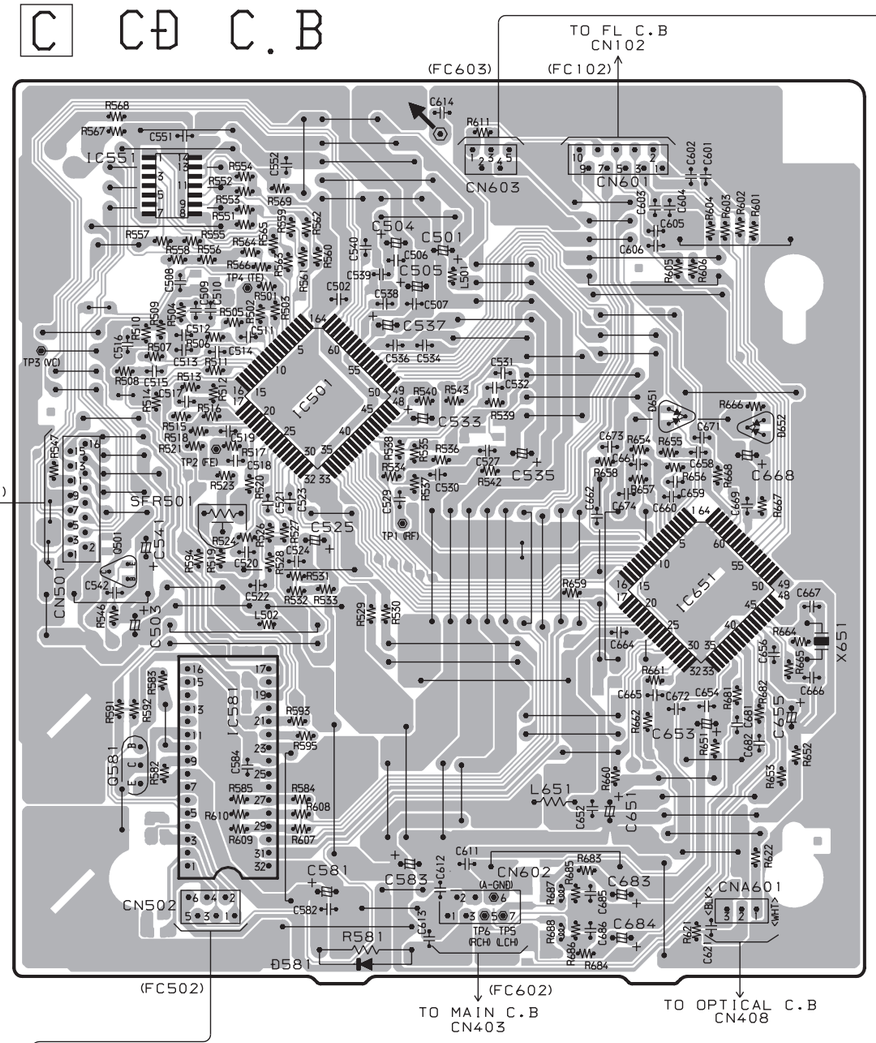
SCHEMATIC DIAGRAM – 3 (FRONT / FL / DECK / FRAME / DRIVE)



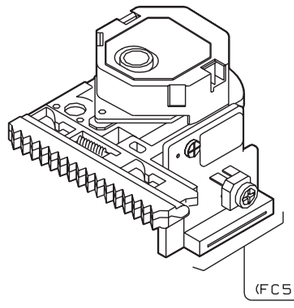
MODE	OPEN	CLOSE
1 PIN	L	H
2 PIN	H	L

TRAY CONDITION	CLOSE	OPEN →← CLOSE	OPEN
3 PIN	L	L	H
5 PIN	L	H	H

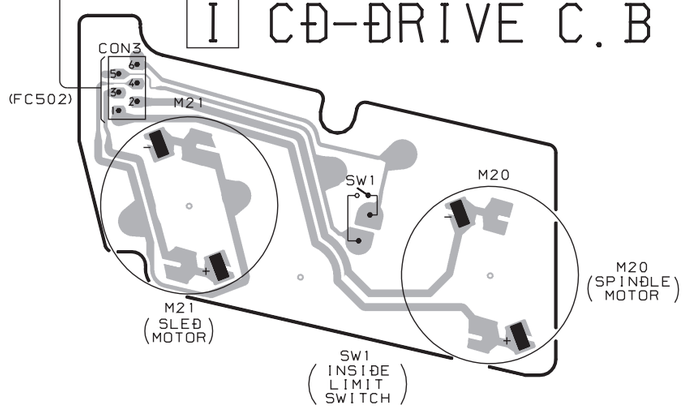
C CÐ C.B

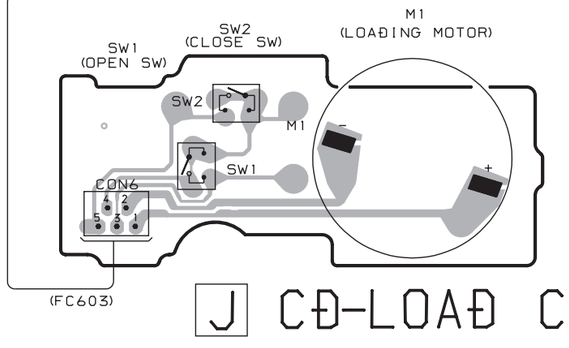


PICK UP ASSY
KSS-213F

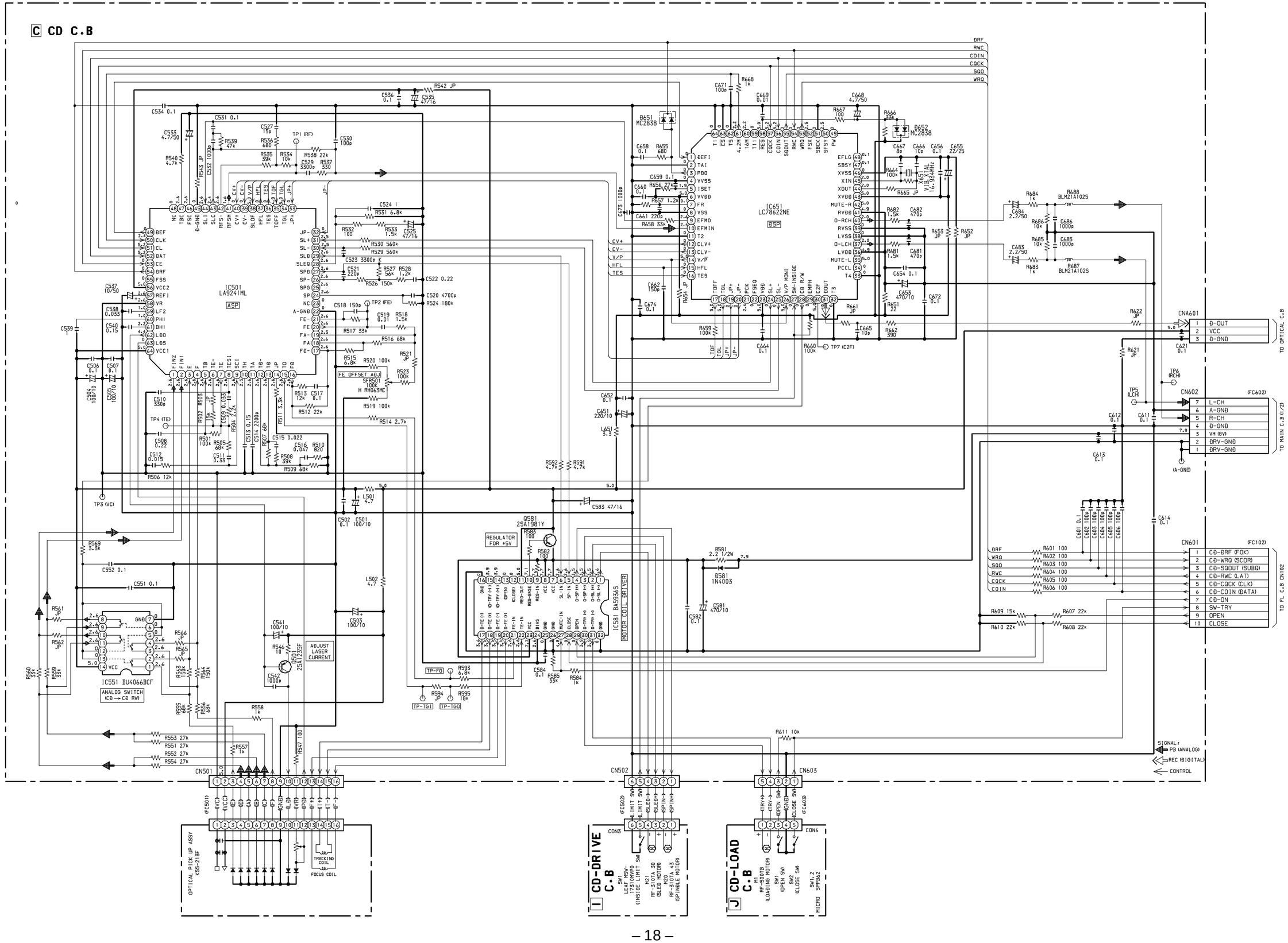


I CÐ-ÐRIVE C.B

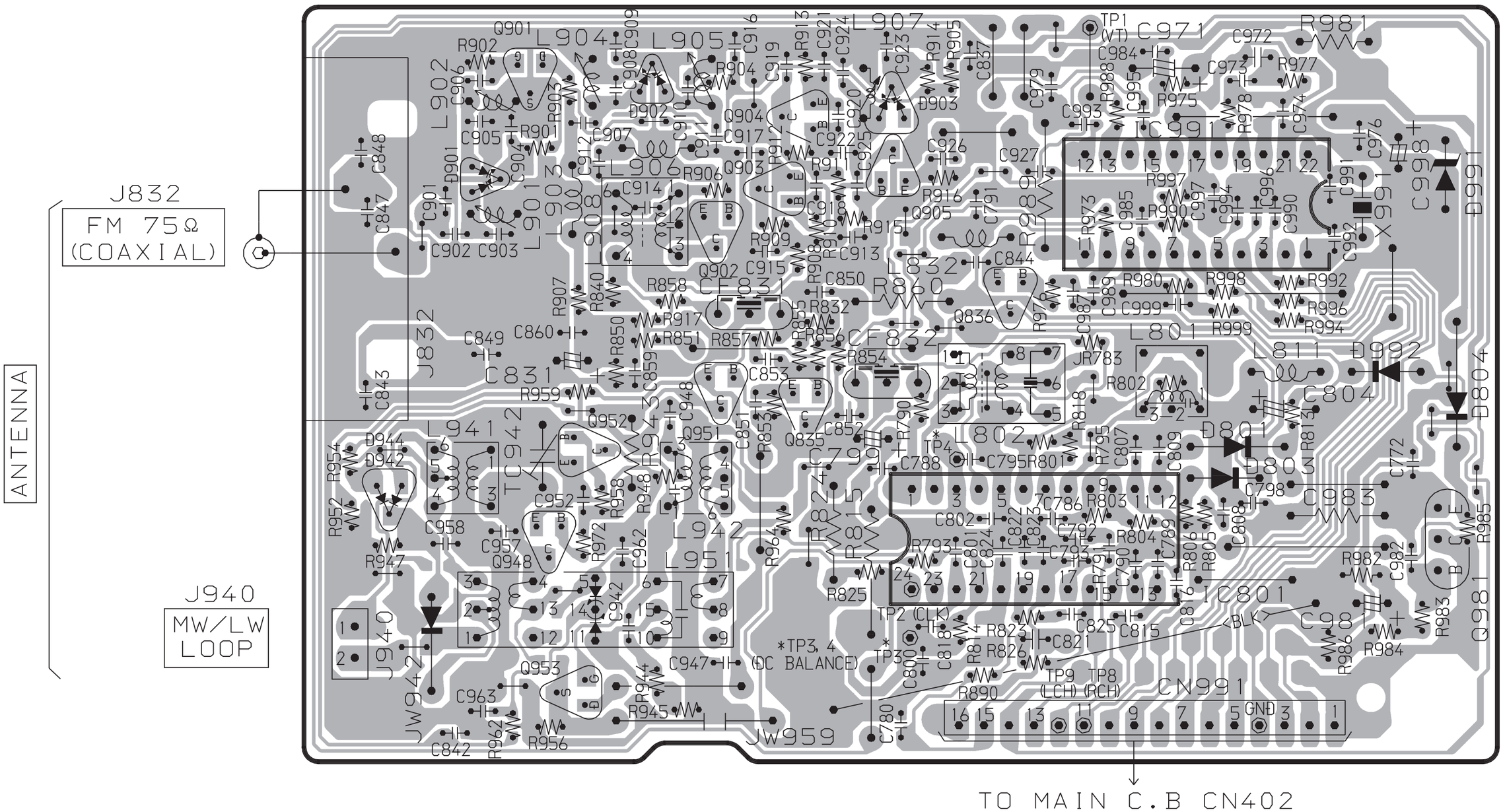


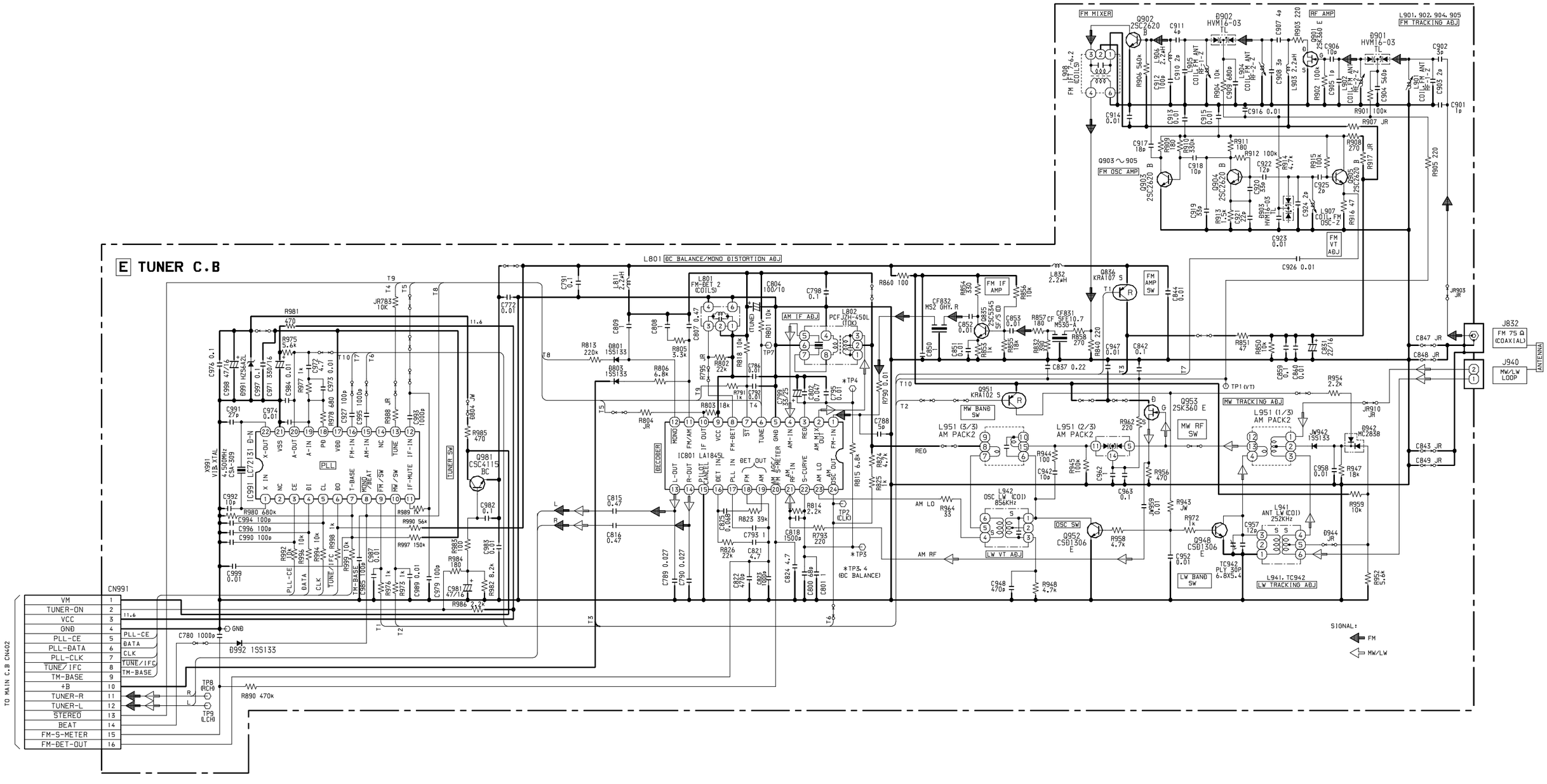


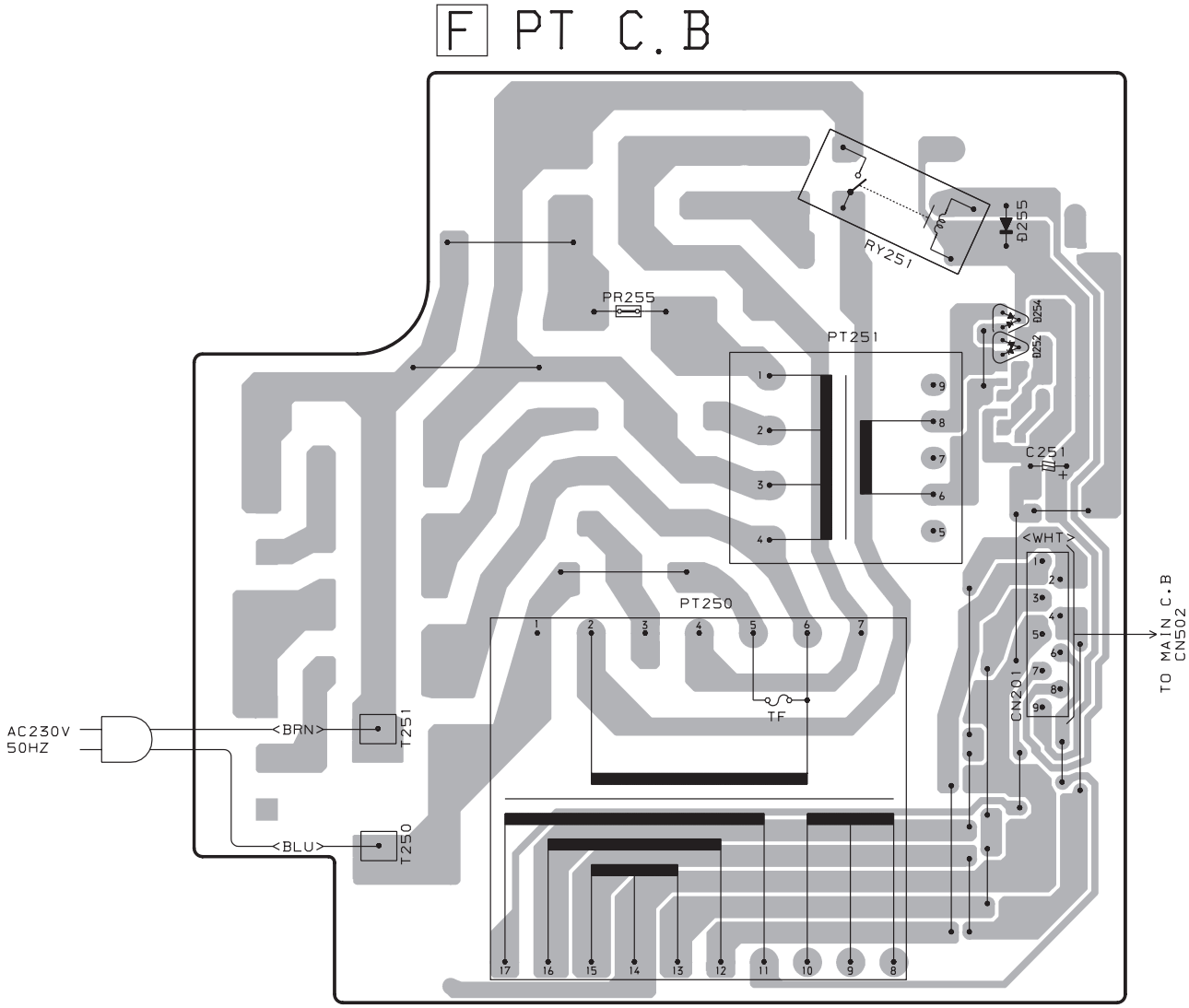
J CÐ-LOAÐ C.B


C CD C.B
IC501 LA9241ML
ASP
IC651 LC78622NE
DSP
IC581 BA5936S
MOTOR COIL DRIVER
IC551 BU4066BCF
ANALOG SWITCH (CD → CD RW)
REGULATOR FOR +5V
ADJUST LASER CURRENT
FE OFFSET ADJ
TP1 (RF)
TP2 (FE)
TP3 (VC)
TP4 (TE)
TP5 (LCH0)
TP6 (RCH0)
TP7 (C2F)
TP-FG
TP-TG1
TP-TG0
CN501
CN502
CN603
CN601
CN602
CNA601
CON3
CON6
I CD-DRIVE C.B
J CD-LOAD C.B
OPTICAL PICK UP ASSY KSS-215F
TRACKING COIL
FOCUS COIL
TO OPTICAL C.B CN408
TO MAIN C.B (1/2) CN403
TO FL C.B CN102
SIGNAL : PB (ANALOG)
REC (DIGITAL)
CONTROL

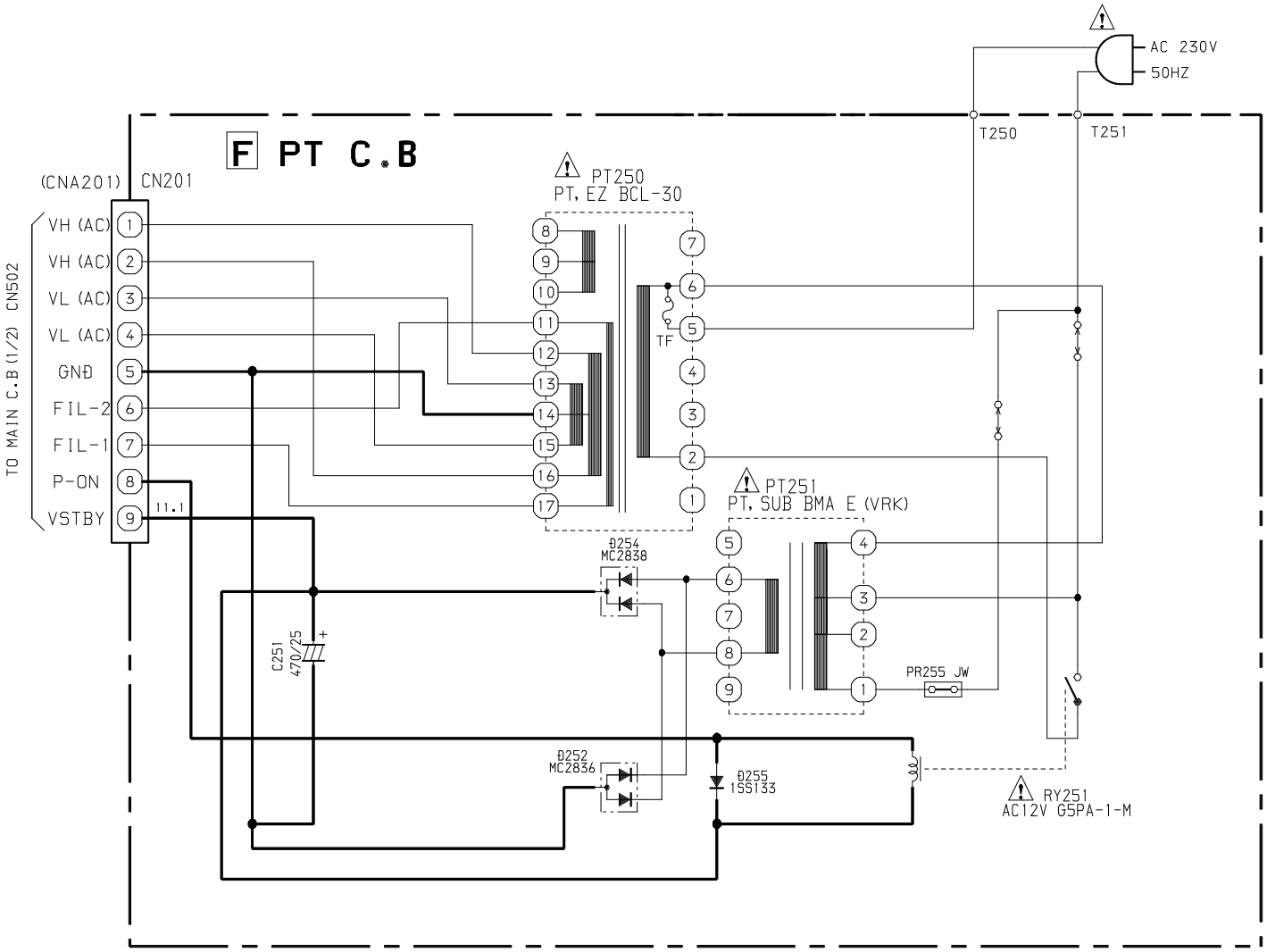
E TUNER C.B

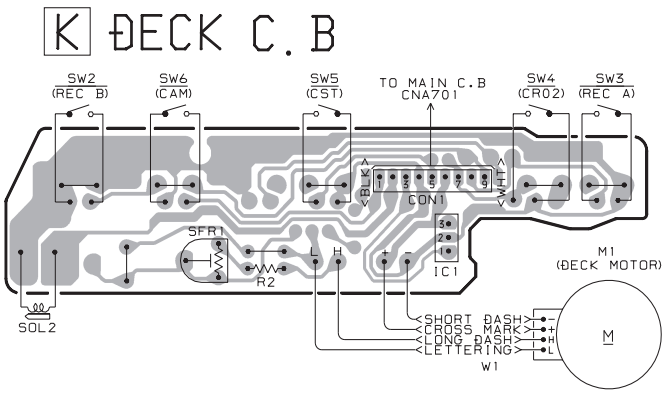

J832
FM 75Ω
(COAXIAL)
ANTENNA
J940
MW/LW
LOOP
TO MAIN C.B CN402
L902
L903
L904
L905
L906
L907
L908
TC942
L941
L942
L951
CF831
CF832
L832
L801
L802
L811
C831
C832
C991
CN991
Q901
Q902
Q903
Q904
Q905
Q951
Q952
Q953
Q835
Q836
Q981
D901
D902
D903
D944
D942
D992
D804
D801
D803
TP1 (VT)
TP2 (CLK)
TP3, 4 (DC BALANCE)
TP4
TP8 (RCH)
TP9 (LCH)
JW942
JW959
R858
R860
R832
R854
R856
R857
R851
R917
R907
R840
R850
R859
R959
R954
R952
R947
R958
R948
R962
R956
R945
R964
R825
R890
R981
R977
R975
R978
R997
R990
R973
R980
R998
R992
R996
R994
R999
R802
R818
R813
R795
R807
R809
R788
R795
R801
R803
R804
R793
R791
R806
R805
R985
R982
R983
R984
R986
C971
C972
C973
C974
C976
C977
C978
C984
C995
C993
C988
C985
C997
C994
C996
C990
C991
C992
C927
C926
C916
C919
C921
C924
C923
C920
C922
C925
C917
C912
C911
C910
C908
C909
C907
C906
C905
C904
C903
C902
C901
C914
C913
C915
C918
C791
C837
C979
C844
C850
C860
C849
C843
C848
C847
C853
C852
C851
C948
C952
C958
C957
C962
C942
C947
C963
C842
C799
C788
C795
C786
C802
C822
C823
C824
C801
C792
C793
C789
C790
C807
C809
C808
C798
C772
C983
C982
C981
C818
C816
C817
C825
C815
C821
C826
C827
C780
C800
R891
R823
R826
TP9
TP8
GND
<BLK>

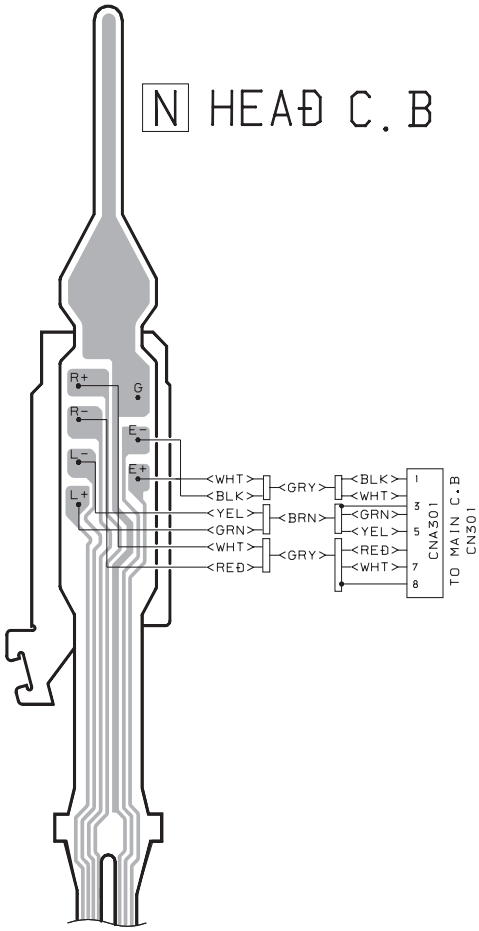

E TUNER C.B
FM MIXER
RF AMP
L901, 902, 904, 905 FM TRACKING ADJ
Q902 2SC2620
D902 HVM16-03 TL
D901 HVM16-03 TL
Q901 2SK360 E
FM OSC AMP
Q903~905
Q903 2SC2620 B
Q904 2SC2620 B
Q905 2SC2620 B
D903 HVM16-03 TL
FM VT ADJ
L907 COIL FM OSC-2
L908 FM OSC COIL
L904 COIL FM ANT HF-2
L905 COIL FM ANT HF-2
L906 COIL FM ANT HF-2
L903 COIL FM ANT HF-2
L902 COIL FM ANT HF-2
L901 COIL FM ANT HF-2
L801 BC BALANCE/MONO DISTORTION ADJ
L801 FM-DET 2 (COIL5)
L802 PCFJ2H-450L (10K)
AM IF ADJ
IC801 LA1845L
DECODER
DET OUT
Q856 KRA107 S
FM AMP SW
FM IF AMP
CF832 MS2 GHY. R
CF831 SFE10.7 MS3G-A
Q835 2SC3545 S/T/S (D)
Q951 KRA102 S
MW BAND SW
MW RF SW
MW TRACKING ADJ
L951 (3/3) AM PACK2
L951 (2/3) AM PACK2
L951 (1/3) AM PACK2
L942 OSC LW (COI) 856KHz
LW VT ADJ
OSC SW
Q952 CSD1306 E
Q948 CSD1306 E
LW BAND SW
L941 ANT LW (COI) 252KHz
LW TRACKING ADJ
Q953 2SK360 E
D942 MC2838
D944 JR
JW942 1SS133
JR903 JR
JR910 JR
J832 FM 75Ω (COAXIAL)
J940 MW/LW LOOP
ANTENNA
TP1 (VT)
*TP3, 4 (DC BALANCE)
*TP4
*TP5
TP2 (CLK)
TUNER SW
Q981 CSC4115 BC
X901 VIB.XTAL 4.500MHz C5A-309
PLL
CN991
VM 1
TUNER-ON 2
VCC 3
GND 4
PLL-CE 5
PLL-DATA 6
PLL-CLK 7
TUNE/IFC 8
TM-BASE 9
+B 10
TUNER-R 11
TUNER-L 12
STEREO 13
BEAT 14
FM-S-METER 15
FM-DET-OUT 16
TO MAIN C.B CN402
SIGNAL:
FM
MW/LW

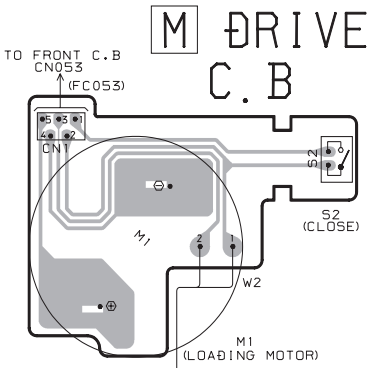

F PT C.B
RY251
D255
PR255
PT251
D254
D252
C251
<WHT>
PT250
TF
CN201
TO MAIN C.B
CN502
AC230V
50HZ
<BRN>
T251
<BLU>
T250

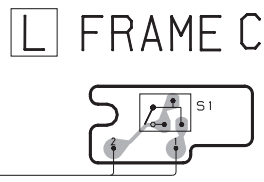
SCHEMATIC DIAGRAM – 6 (PT)

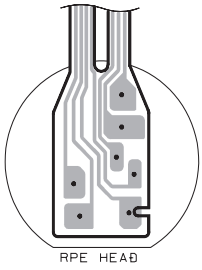



K DECK C.B
SW2 (REC B)
SW6 (CAM)
SW5 (CST)
TO MAIN C.B CNA701
SW4 (CR02)
SW3 (REC A)
BLK
WHT
CON1
SFR1
R2
IC1
M1 (DECK MOTOR)
SOL2
SHORT DASH
CROSS MARK
LONG DASH
LETTERING
W1
M


N HEAD C.B
R+
R-
L-
L+
G
E-
E+
WHT
BLK
YEL
GRN
WHT
RED
GRY
BRN
GRY
BLK
WHT
GRN
YEL
RED
WHT
CNA301
TO MAIN C.B CN301

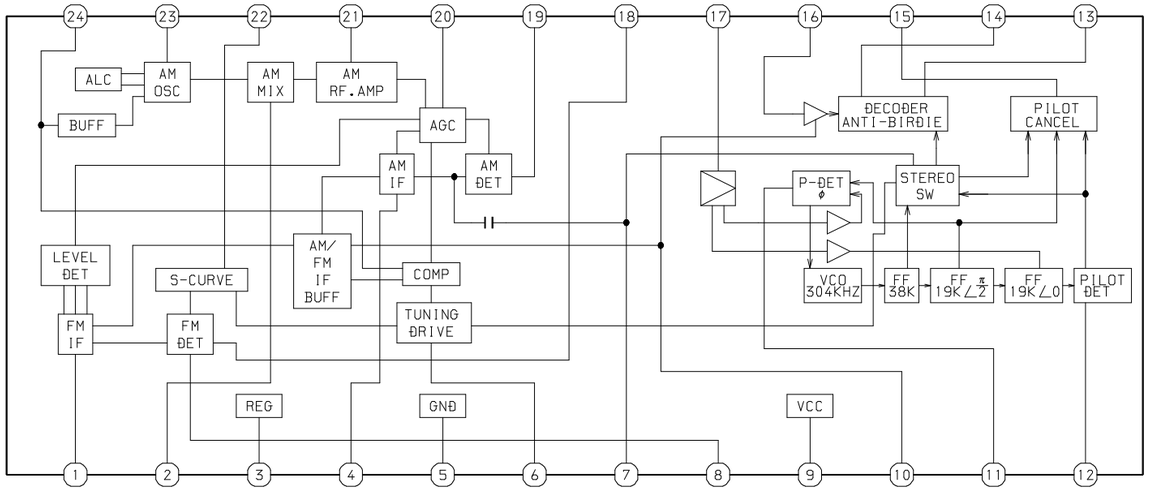

M DRIVE C.B
TO FRONT C.B CN053
(FC053)
CN1
S2
(CLOSE)
M1
W2
M1 (LOADING MOTOR)


L FRAME C.B
S1

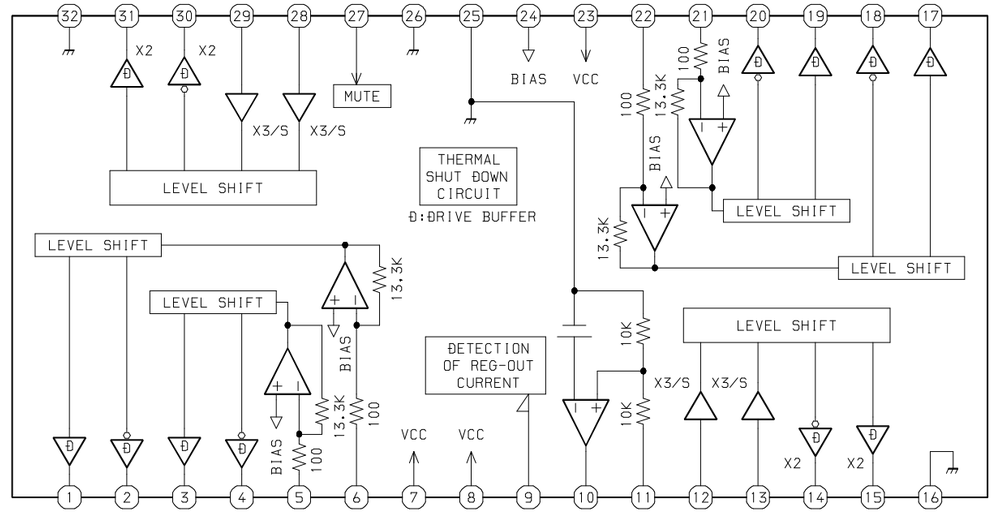

RPE HEAD

IC BLOCK DIAGRAM

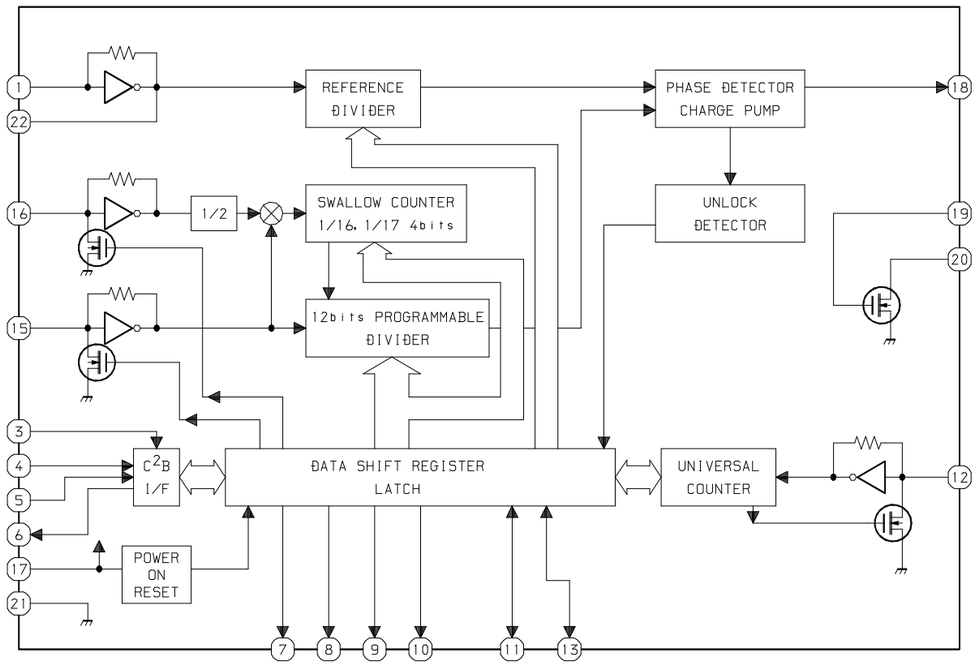
IC, LA1845L



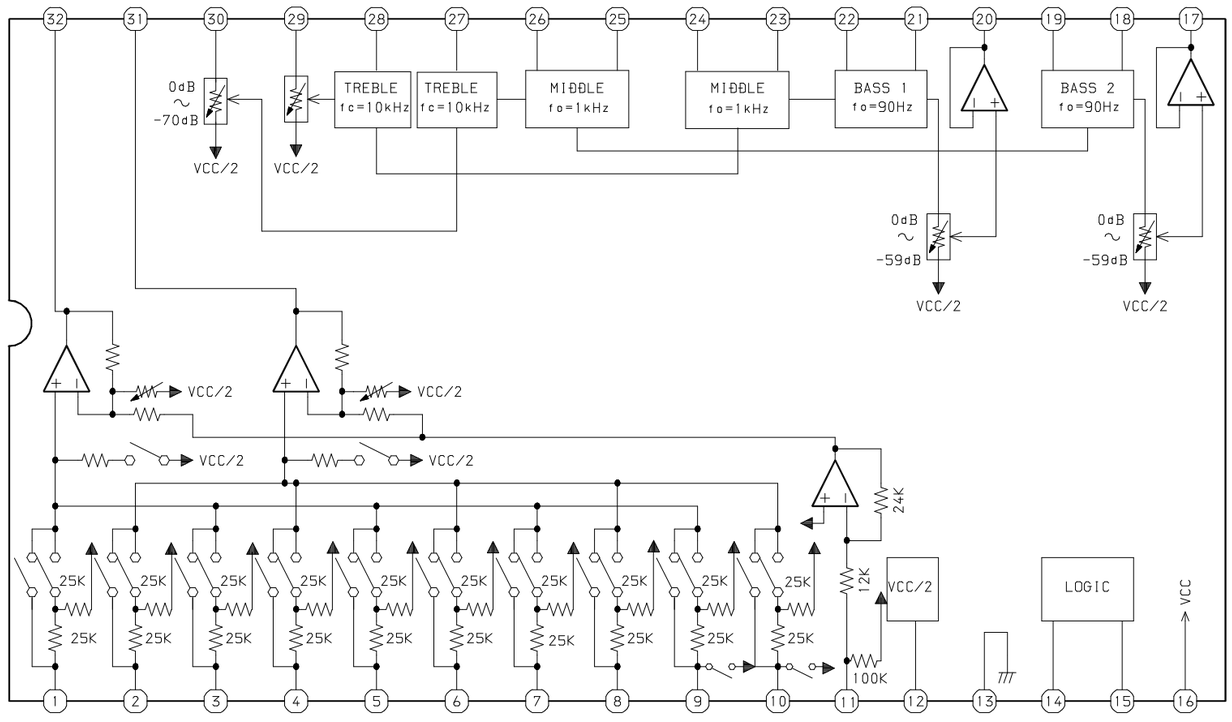
IC, BA5936S



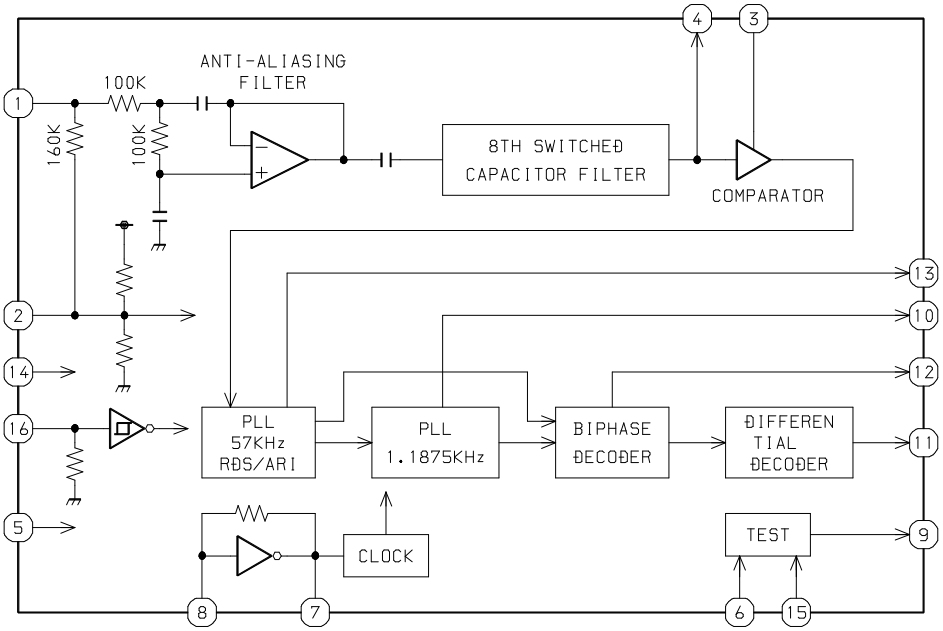
IC, LC72131D-N



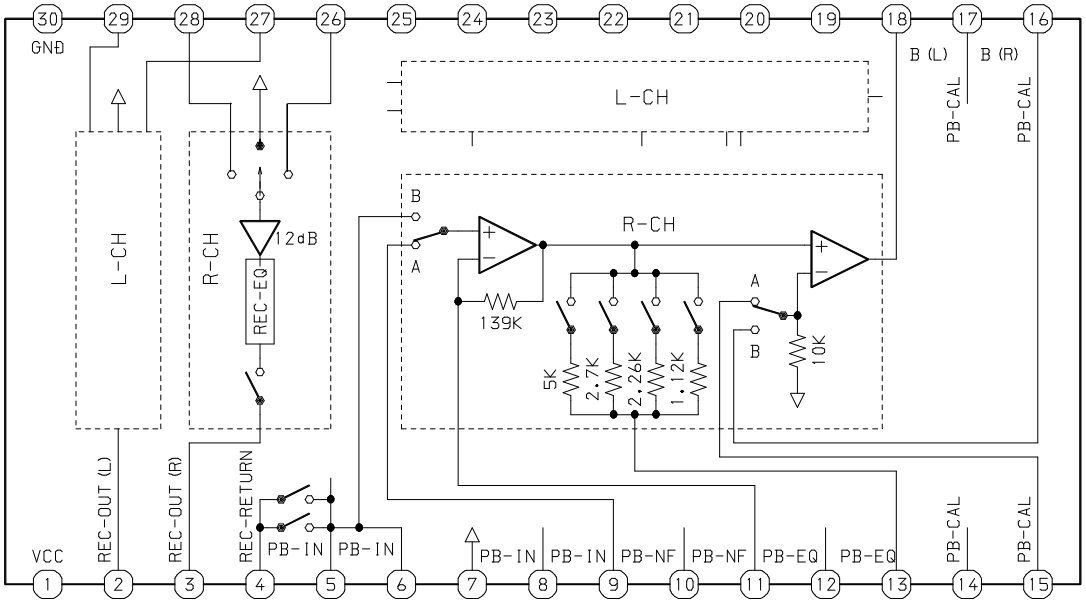
IC, BD3861FS



IC, BU1920FS

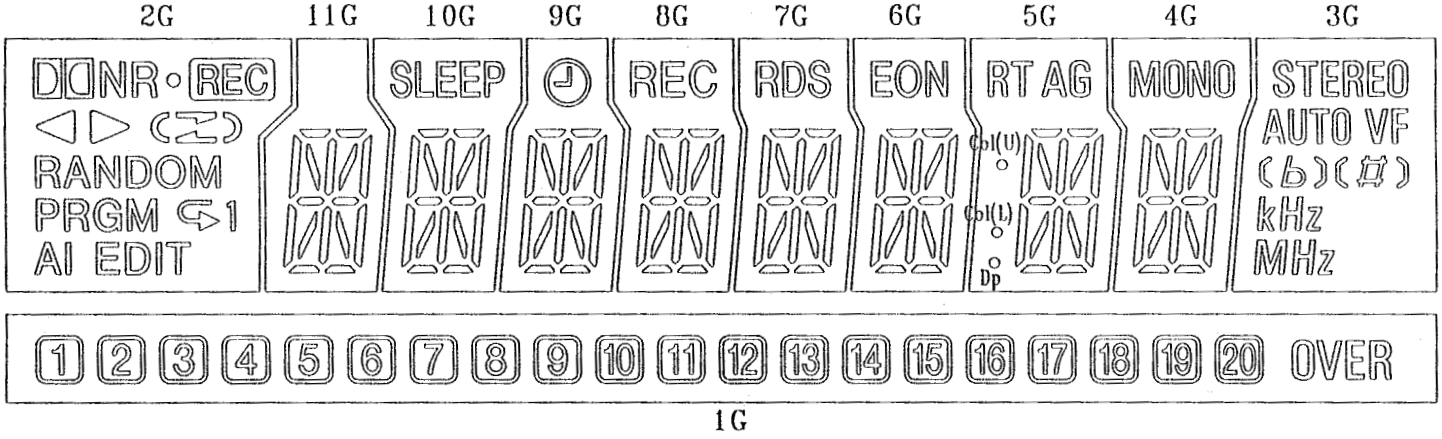


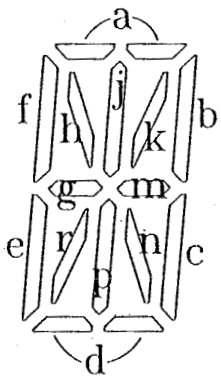
IC, HA12211



FL (HNA – 11MS25) GRID ASSIGNMENT / ANODE CONNECTION

GRID ASSIGNMENT





(4G–11G)

ANODE CONNECTION

	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	–	–	–	–	–	–	–	–	MHz	–	OVER
P2	d	d	d	d	d	d	d	d	kHz	–	20
P3	n	n	n	n	n	n	n	n	–	–	19
P4	p	p	p	p	p	p	p	p	–	–	18
P5	r	r	r	r	r	r	r	r	(♭)	–	17
P6	e	e	e	e	e	e	e	e	–	–	16
P7	c	c	c	c	c	c	c	c	–	–	15
P8	g	g	g	g	g	g	g	g	–	EDIT	14
P9	m	m	m	m	m	m	m	m	–	AI	13
P10	f	f	f	f	f	f	f	f	(♯)	1	12
P11	b	b	b	b	b	b	b	b	–	↪	11
P12	k	k	k	k	k	k	k	k	–	PRGM	10
P13	j	j	j	j	j	j	j	j	–	RANDOM	9
P14	h	h	h	h	h	h	h	h	AUTO	☽	8
P15	a	a	a	a	a	a	a	a	–	⇄	7
P16	–	–	–	–	–	–	col(U)	–	VF	☾	6
P17	–	–	–	–	–	–	col(L)	–	–	REC	5
P18	–	–	–	–	–	–	Dp	–	–	○	4
P19	–	–	–	–	–	–	–	–	–	▷	3
P20	–	–	–	–	–	–	AG	–	–	◁	2
P21	–	SLEEP	◴	REC	RDS	EON	RT	MONO	STEREO	NR	1

IC DESCRIPTION

IC, LC78622NE

Pin No.	Pin Name	I/O	Description
1	DEFI	I	Defect detection signal (DEF) input. ("L" is applied when not used.)
2	TAI	I	For PLL/Test input. (Connected to 0V)
3	PDO	O	Phase comparison output to control the external VCO.
4	VVSS	–	Ground of the built-in VCO. Normally 0V.
5	ISET	I	For the connection of a resistor which adjusts the PDO output current.
6	VVDD	–	Power supply of the built-in VCO.
7	FR	I	Adjusts the VCO frequency range.
8	VSS	–	Ground of digital circuits. Normally 0V.
9	EFMO	O	For slice level control/EFM signal output.
10	EFMIN	I	EFM signal input.
11	T2	I	Test input. A pull-down resistor is incorporated. (Connected to 0V)
12	CLV+	O	Disc motor control tri-state output.
13	CLV-		
14	V/$\overline{P}$	O	Output to monitor the automatic switching between the rough servo control and phase servo control. "H" : Rough servo, "L": Phase servo.
15	HFL	I	Track detection signal input. Schmitt trigger input.
16	TES	I	Track error signal input. Schmitt trigger input.
17	TOFF	O	Tracking off output.
18	TGL	O	Tracking gain switching output. "L" raises the gain.
19	JP+	O	Track jump control tri-state output.
20	JP-		
21	PCK	O	Monitors the clock signal for EFM data playback. 4.3218MHz when the phase is locked. (Not used)
22	FSEQ	O	Sync signal detection output. Goes "H" when the sync signal detected from the EFM signal matches the sync signal generated internally. (Not used)
23	VDD	–	Power supply of digital circuits.
24	SL+	O	Controlled by serial data command issued by the microprocessor.
25	SL–	O	Controlled by serial data command issued by the microprocessor.
26	V/P MONI	I	Prevent high speed rotation of no recording CD-R/RW disc by watch V/$\overline{P}$.
27	SW-INSIDE	I	CD pickup inside limit switch.
28	CD R/W	O	CD-RW disc select control.
29	EMPH	O	Deemphasis monitor. "H": when playing a deemphasis disc. (Not used)
30	C2F	O	C2 flag output. (Not used)
31	DOUT	O	Output a digital OUT signal. (EIAJ format)
32	T3	I	Test input. (Connected to 0V)
33	T4		
34	PCCL	–	Not used.
35	MUTE-L	O	Lch 1-bit DAC/Lch muting output. (Not used)
36	LVDD	–	Lch power supply.
37	O-LCH	O	Lch output.
38	LVSS	–	Lch ground. Normally 0V.
39	RVSS	–	Rch 1-bit DAC/Rch ground. Normally 0V.

Pin No.	Pin Name	I/O	Description
40	O-RCH	O	Rch output.
41	RVDD	–	Rch power supply.
42	MUTE-R	O	Rch muting output. (Not used)
43	XVDD	–	Power supply of crystal oscillator.
44	XOUT	O	For the connection of a 16.934MHz crystal oscillator.
45	XIN	I	
46	XVSS	–	Ground of crystal oscillator. Normally 0V.
47	SBSY	O	Subcode block sync signal output. (Not used)
48	EFLG	O	C1, C2, single, duplex correction monitor. (Not used)
49	PW	O	Output of subcodes P, Q, R, S, T, U and W. (Not used)
50	SFSY	O	Subcode frame sync signal output. Falls when the subcode is set to the standby state. (No used)
51	SBCK	I	Subcode read-out clock input. Schmitt trigger input. ("L" is applied when not used.) (Connected to 0V)
52	FSX	O	7.35kHz sync signal output obtained by dividing the oscillator frequency. (Not used)
53	WRQ	O	Subcode Q standby output.
54	RWC	I	Read/write control input. Schmitt trigger input.
55	SQOUT	O	Subcode Q output.
56	COIN	I	Command input from the microprocessor.
57	$\overline{\text{CQCK}}$	I	Command input retrieval clock or subcode retrieval clock input from SQOUT. Schmitt trigger input.
58	$\overline{\text{RES}}$	I	LC78622NE reset input.
59	T11	O	Test output. Set to open (normally "L" output.) (Not used)
60	16M	O	16.9344MHz output. (Not used)
61	4.2M	O	4.236MHz output.
62	T5	I	Test input. A pull-down resistor is incorporated. (Connected to 0V)
63	$\overline{\text{CS}}$	I	Chip select input. (Connected to 0V)
64	T1	I	Test input with no pull-down resistor. (Connected to 0V)

IC, LA9241ML

Pin No.	Pin Name	I/O	Description
1	FIN2	I	For the connection of the pickup photodiode. Addition to the FIN1 pin creates an RF signal and subtraction from it create an EF signal.
2	FIN1	I	For the connection of the pickup photodiode.
3	E	I	For the connection of the pickup photodiode. Subtraction from the F pin creates a TE signal.
4	F	I	For the connection of the pickup photodiode.
5	TB	I	Inputs the DC components in the TE signal.
6	TE–	I	For the connection of a resistor which sets the gain of the TE signal between this pin and the TE pin.
7	TE	O	TE signal output.
8	TESI	I	TES (track error sense) comparator input. The TE signal is passed through a BPF.
9	SCI	I	Shock detection input.
10	TH	I	Sets the time constant for the tracking gain.
11	TA	O	TA amp output.
12	TD–	I	Composes the tracking phase compensation constant between the TD and VR pins.
13	TD	O	Sets the tracking phase compensation.
14	JP	I	Sets the amplitude of the tracking jump signal (kick pulses).
15	TO	O	Tracking control signal output.
16	FD	O	Focusing control signal output.
17	FD–	I	Composes the focusing phase compensation constant between the FD and FA pins.
18	FA	O	Composes the focusing phase compensation constant between the FD- and FA- pins.
19	FA–	I	Composes the focusing phase compensation constant between the FA and FE pins.
20	FE	O	FE signal output.
21	FE–	I	For the connection of a resistor whichs sets the gain of the FE signal between this pin and the TE pin.
22	A-GND	–	Ground of analog signals.
23	NC	–	Not connected.
24	SP	O	Single-ended output of the signals input to the CV+ and CV- pins.
25	SPG	I	For the connection of a resistor which sets the gain in the spindle 12cm mode. (Not used)
26	SP–	I	For the connection of the spindle phase compensation constant with the SPD pin.
27	SPD	O	Spindle control signal output.
28	SLEQ	I	For the connection of sled phase compensation constant.
29	SLD	O	Sled control signal output.
30	SL–	I	Sled feed signal input from the microprocessor.
31	SL+		
32	JP–	I	Tracking signal input from the DSP.
33	JP+		
34	TGL	I	Tracking gain control signal input from the DSP. Low gain when TGL is "H".
35	TOFF	I	Tracking off control signal input from the DSP. Off when TOFF is "H".
36	TES	O	Outputs the TES signal to the DSP.
37	HFL	O	The HFL (high frequency level) signal is used to judge whether the main beam is positioned on the pit or on the mirror.

Pin No.	Pin Name	I/O	Description
38	SLOF	I	Sled servo off control input.
39	CV–	I	CLV error signal input from the DSP.
40	CV+		
41	RFSM	O	RF output.
42	RFS–	O	Sets the RF gain and the EFM signal's 3T compensation constant together with the RFSM pin.
43	SLC	O	The SLC (slice level control) signal is output to control the DSP's data slice level of the RF waveform.
44	SLI	I	Input to control the DSP's data slice level.
45	D-GND	–	Ground of digital signals.
46	FSC	O	Output for the focus search smoothing capacitor.
47	TBC	I	The TBC (tracking balance control) signal sets the EF balance variation range.
48	NC	–	Not connected.
49	DEF	O	Disc defect detection output.
50	CLK	I	Reference clock input. 4.23MHz is input from the DSP.
51	CL	I	Microprocessor command clock input.
52	DAT	I	Microprocessor command data input.
53	CE	I	Microprocessor chip enable input.
54	DRF	O	DRF (detect RF) is an output to detect the RF level.
55	FSS	I	The FSS (focus search select) signal switches the focus search modes (+/-search / +search with respect to the reference voltage). (Not used)
56	VCC2	–	VCC of servo and digital circuits.
57	REFI	–	For the connection of bypass capacitor for the reference voltage.
58	VR	O	Reference voltage output.
59	LF2	–	Sets the time constant for disc defect detection.
60	PH1	–	For the connection of a capacitor to hold the RF signal peak.
61	BH1	–	For the connection of a capacitor to hold the RF signal bottom.
62	LDD	O	APC circuit output.
63	LDS	I	APC circuit input.
64	VCC1	–	VCC of RF signal circuits.

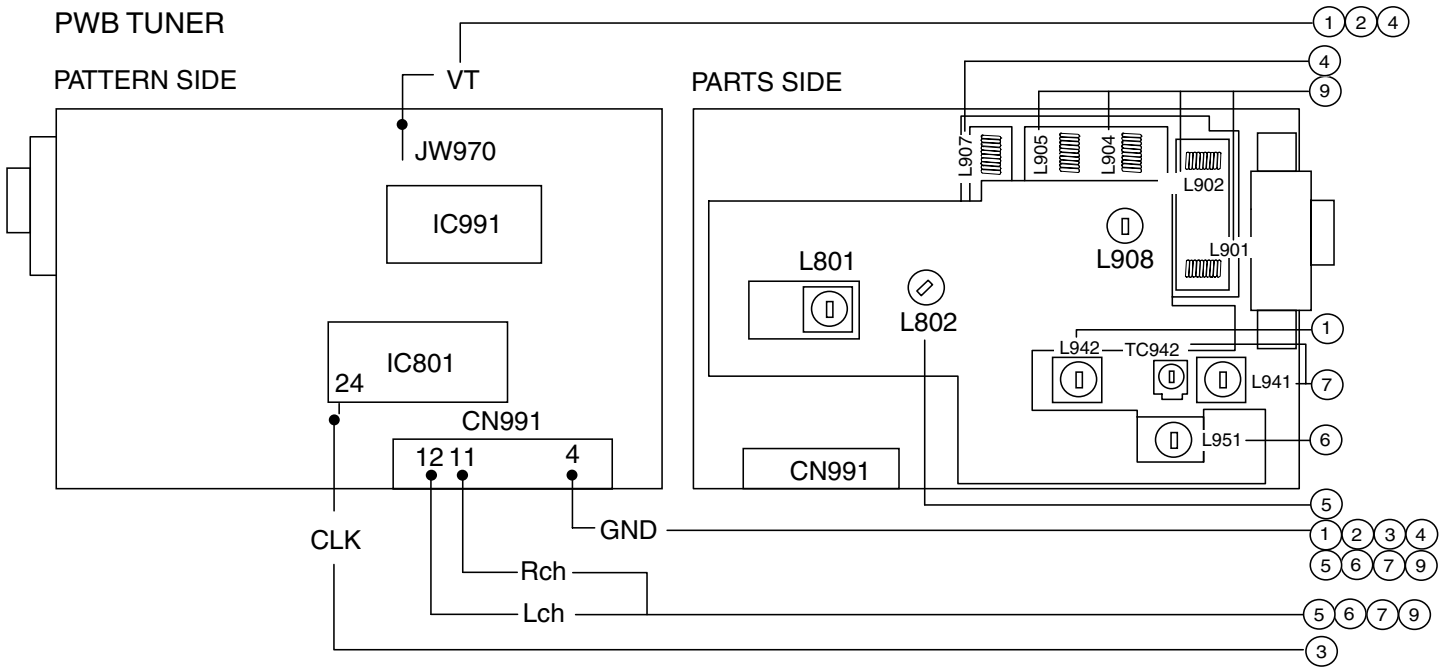
IC, LC876564V-5Y22

Pin No.	Pin Name	I/O	Description
1	O-COIN	O	CD IC control data output.
2	O-CDCONT	O	CD block power ON / OFF control output.
3	O-OPEN (CD)	O	CD tray open data output.
4	O-CLOSE (CD)	O	CD tray close data output.
5	O-OPEN (CT)	O	Deck open / close output.
6	$\overline{\text{O-PL}}$	O	Deck solenoid output.
7	I-AS	I	Deck auto stop signal input.
8	O-MOTOR	O	Deck motor ON / OFF output.
9	O-CLOSE (CT)	O	Deck open / close output.
10	O-CLKSFT	O	MICON clock shift control.
11	I-RESET	I	Reset input.
12	I-TU SIG	I	Tuner SD detect input.
13	I-CDSW (DOOR)	I	CD mecha switch A/D converter input.
14	VSS1	–	GND.
15	CF1	–	Connection of 9.43MHz oscillator.
16	CF2	–	Connection of 9.43MHz oscillator.
17	VDD1	–	Power supply input.
18	$\overline{\text{I-HOLD}}$	I	Power failure detection input.
19	I-LEVEL	I	Signal level input.
20	I-STOP (HEAD)	I	Deck cam switch input and tape tray condition detect input.
21	I-CSTSW	I	Cassette tape and side A, B tab of cassette detect input.
22	I-ENC3 (VOL)	I	Volume rotary encoder A/D input.
23	I-ENC2 (TREBLE)	I	Treble rotary encoder A/D input.
24	I-ENC1 (BASS)	I	Bass rotary encoder A/D input.
25	I-KEY2	I	Key input. (A/D)
26	I-KEY1	I	Key input. (A/D)
27	I-TM BASE	I	Reference clock input for watch.
28	I-RDCL	I	RDS clock input. (EZ only)
29	I-RMC	I	System remote control signal input.
30 ~ 40	G11 ~ G1	O	FL grid G11 ~ G1 output.
41 ~ 45	P21 ~ P17	O	FL segment P21 ~ P17 output.
46	VDD3	–	Power supply input.
47 ~ 50	P16 ~ P13	O	FL segment P16 ~ P13 output.
51	VP	–	Power supply for FL display.
52 ~ 62	P12 ~ P2	O	FL segment P12 ~ P2 output.
63	LW/P1	I/O	LW diode input / FL segment P1 output.
64 ~ 67	NC	–	Not connected.
68	SI (ECHO)	–	Connected to GND through a resistor.
69	SLT (ECHO)	–	Connected to GND through a resistor.
70	SCK (ECHO)	–	Connected to GND through a resistor.
71	I-MIC	I	Microphone input. (Connected to GND through a resistor)
72	VDD4	–	Power supply input.

Pin No.	Pin Name	I/O	Description
73	O-LED (CD)	O	CD function LED ON / OFF.
74	O-LED (TU)	O	Tuner function LED ON / OFF.
75	O-LED (AU)	O	AUX function LED ON / OFF.
76	O-LED (TA)	O	Tape function LED ON / OFF.
77	O-LED (PW)	O	Power function LED ON / OFF. (Light up : ECO standby)
78	$\overline{\text{O-ECO}}$	O	Relay switch ON / OFF output.
79	O-TUCE	O	PLL IC chip enable output.
80	O-TUDO	O	PLL IC control data output.
81	O-TUCL	O	PLL IC control clock output.
82	I-TUDI	I	Tune IF count serial data input.
83	$\overline{\text{I-STEREO}}$	I	Tuner stereo detect input.
84	I-RDDT	I	RDS data input. (EZ only)
85	O-TUCONT	O	Tuner ON / OFF control output.
86	O-CLK (FUNC)	O	Function IC control clock output.
87	O-DATA (FUNC)	O	Function IC control data output.
88	O-AMP-CONT	O	Amplifier ON / OFF control output. (Not used)
89	VSS2	–	GND.
90	VDD2	–	Power supply input.
91	O-MUTE	O	Audio mute ON / $\overline{\text{OFF}}$ control output.
92	O-DOLBY	O	Dolby ON / OFF control output. (Not used)
93	O-$\overline{\text{BIAS}}$	O	Bias $\overline{\text{ON}}$ / OFF control output.
94	O-PB/REC	O	PB IN /REC OUT control output.
95	O-REC-SEL	O	REC IN / REC MUTE control output.
96	I-DRF	I	CD focus ON detect data input.
97	I-WRQ	I	CD interrupt subcode out standby signal input.
98	I-SQOUT	I	CD IC subcode Q data input.
99	O-RWC	O	CD IC control chip enable output.
100	O-CQCK	O	CD IC control clock output.

ADJUSTMENT (TUNER / DECK / CD / FL)

<TUNER SECTION>



1. VT Adjustment (LW)

   Requirement

   Measuring Device: Digital Multimeter

   Test Point: VT, GND

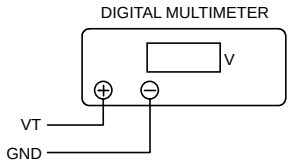
   Adjustment Point: L942

   (1) Adjust the reception frequency of the set to 144 kHz.

   (2) Adjust L942 until the test point voltage (VT) is 1.3 V ± 0.05 V.

   (3) Adjust the reception frequency of the set to 290 kHz.

   (4) Check that the test point (VT) voltage is below 8 V.



2. VT Check (MW)

   Requirement

   Measuring Device: Digital Multimeter

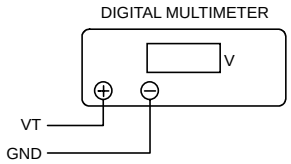
   Test Point: VT, GND

   (1) Adjust the reception frequency of the set to 1602 kHz.

   (2) Check that the test point voltage is below 8 V.

   (3) Adjust the reception frequency of the set to 531 kHz.

   (4) Check that the test point voltage is above 0.6 V.



3. CLOCK Check

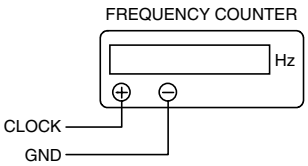
   Requirement

   Measuring Device: Frequency Counter

   Test Point: CLOCK, GND

   (1) Change to MW and adjust the reception frequency of the set to 1602 kHz.

   (2) Check that the test point (CLOCK) frequency is 2052 kHz ± 45 Hz.



4. VT Adjustment (FM)

   Requirement

   Measuring Device: Digital Multimeter

   Test Point: VT, GND

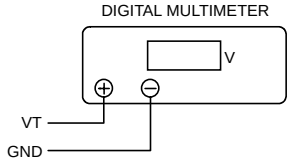
   Adjustment Point: L907

   (1) Adjust the reception frequency of the set to 108.0 kHz.

   (2) Adjust L907 until the test point voltage (VT) is 7 V ± 0.05V.

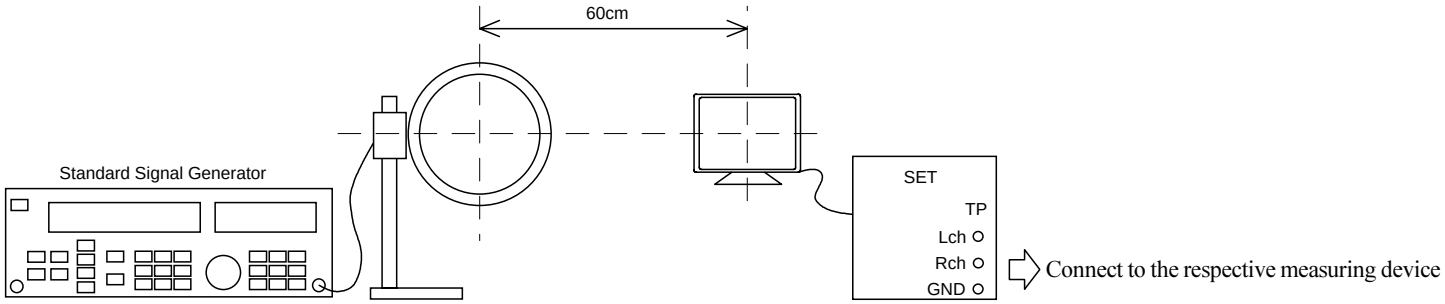
   (3) Adjust the reception frequency of the set to 87.5 MHz.

   (4) Check that the test point voltage is above 0.5 V.

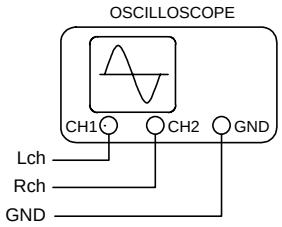


<MW/LW Adjustment>

For MW/LW adjustment, do wiring and connection as in the following.



5. IF adjustment (MW)



Requirement

Measuring Device: Oscilloscope and Millivoltmeter

Test Point: Lch, Rch, GND

Adjustment Point: L802

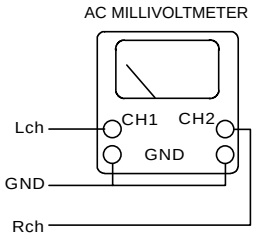
(1) Adjust the setting of Standard Signal Generator (hereinafter S.S.G) to 450 kHz of 30 % variation.

(2) Adjust the reception frequency of the set to 999 kHz.

(3) While looking at the waveform on the oscilloscope, reduce the output level all the way.

(4) Adjust L802 until the value of the millivoltmeter reaches the maximum.

6. Tracking Adjustment (MW)



Requirement

Measuring Device: Oscilloscope and millivoltmeter

Test Point: Lch, Rch, GND

Adjustment Point: L951

(1) Adjust the S.S.G setting to 999 kHz of 30 % variation.

(2) While looking at the waveform on the oscilloscope, reduce the output level all the way.

(3) Adjust L951 until the value of the millivoltmeter reaches the maximum.

7. Tracking Adjustment (LW)

Requirement

Measuring Device: Oscilloscope and millivoltmeter

Test Point: Lch, Rch, GND

Adjustment Point: L941, TC942

(1) Adjust the S.S.G setting to 144 kHz, 30 % variation and reduce the output level all the way.

(2) Adjust L941 until the value of millivoltmeter reaches the maximum.

(3) Adjust the S.S.G setting to 290 kHz, 75 kHz variation, and reduce the output level all the way.

(4) Adjust TC942 until the value of the millivoltmeter reaches the maximum.

(5) Repeat the adjustment 2 or 3 times from step 1 to 4 above.

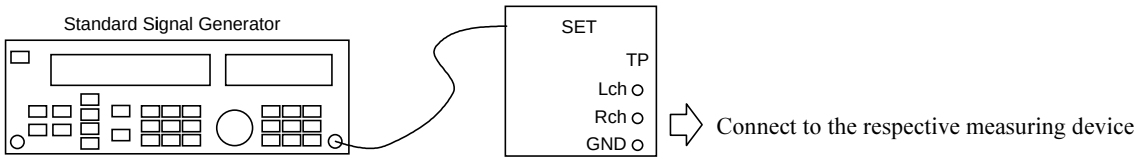
8. Auto Stop Check (MW)

Requirement

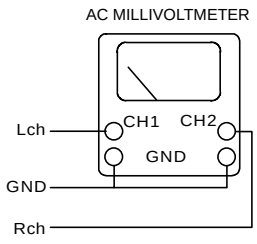
(1) Adjust the S.S.G setting to 999 kHz, 30 % variation, and 78 dBuV for the output level.

(2) Activate the tuner search function, and check that there is reception of 999 kHz.

<FM Adjustment>
For adjusting FM, do wiring and connection as in the following.



9. Tracking Adjustment (FM)



Requirement

Measuring device: Millivoltmeter

Test Point: Lch, Rch, GND

Adjustment Point: L901, L902, L904, L905

(1) Adjust the S.S.G setting to 108.0 MHz, 75 kHz variation and reduce the output level all the way.

(2) Adjust L901, L902, L904, L905 until the value of millivoltmeter reaches the maximum.

(3) Adjust the S.S.G setting to 98.0 MHz, 75 kHz variation, and 66 dBuV for the output level.

(4) Check that the test point voltage is below 13 dBuV.

10. Auto Stop Check (FM)

Requirement

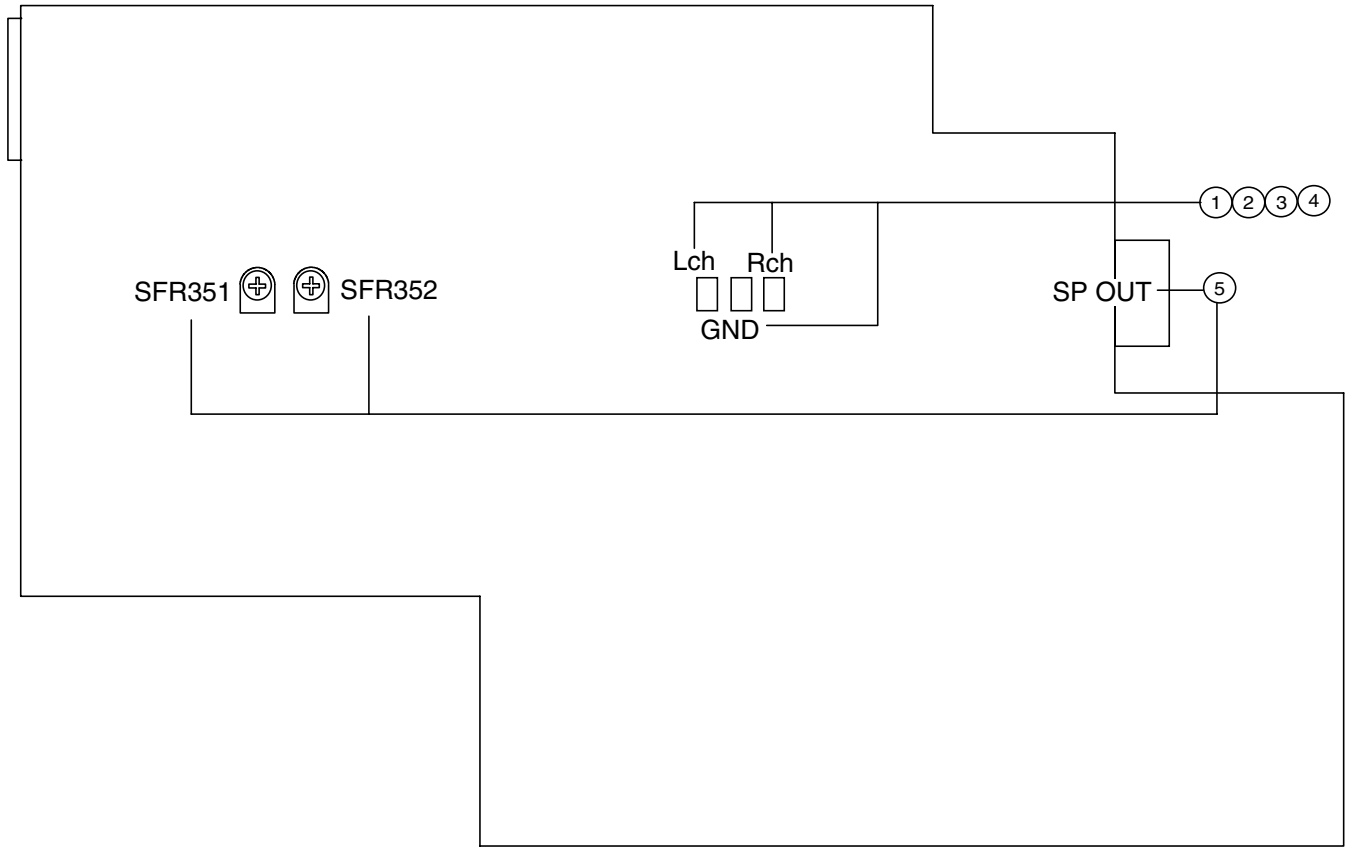
(1) Adjust the S.S.G setting to 98.0 MHz, 75 kHz variation, and 40 dBuV for the output level.

(2) Activate the tuner search function, and check that there is reception of 98.0 MHz.

<DECK SECTION>

PWB MAIN

PATTERN SIDE

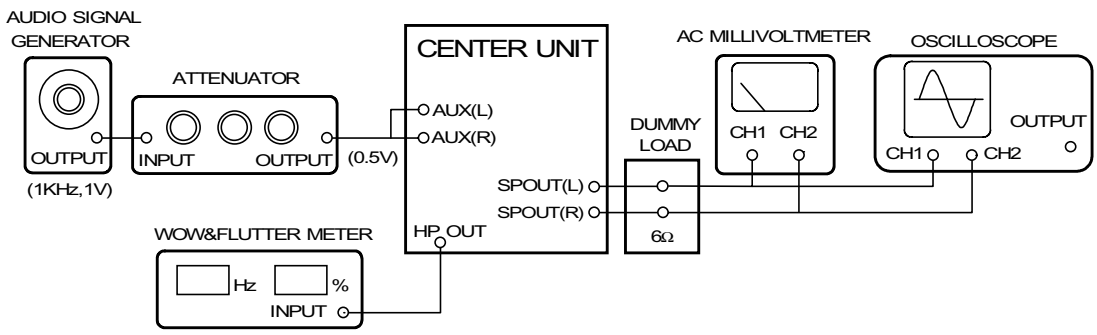


Prepare the following before adjusting the deck.

Preparation

- Measuring Device: Audio Signal Generator / Attenuator / Wow & Flutter Meter (Frequency Counter) / Oscilloscope / Millivolmeter / Dummy Load (6 ohm).

1) Connect the set to the measuring device as shown in the following diagram.
2) Output 1V(1 kHz) from the generator and adjust the attenuator until AUX IN becomes 0.5 V.
3) Set AUX for FUNCTION and adjust the volume until the millivoltmeter value becomes 2 V.



1. Checking Tape Speed

Requirements

Test Tape: TTA-100 (3 kHz)

Test Point: Lch, Rch, GND

Adjustment Point: SFR1

1) Insert the test tape (TTA-100), FWD play back the centre of the tape and check that the speed is 3,000 Hz ± 45 Hz.
2) RVS playback and check that ± 45 Hz is added according to the FWD speed.

2. Adjusting Head Azimuth

Requirements

Test Tape: TTA-300 (10 kHz)

Test Point: Lch, Rch, GND

Adjustment Point: Head Azimuth Screws

1) Set the V mode of the oscilloscope to ADD.
2) Insert the test tape (TTA-300), FWD playback the centre of the tape and adjust, using the head azimuth screws until the waveform of the oscilloscope has reached the maximum when playing back at 10 kHz.
3) Reverse the tape, RVS playback and adjust, using the head azimuth screws until the waveform of the oscilloscope has reached the maximum.
4) After the adjustment, bond lock (1600B) the screws.

3. Checking Playback Frequency Reponse

Requirements

Test Tape: TTA-300 (315 Hz / 10 kHz)

Test Point: Lch, Rch, GND

1) Insert the test tape (TTA-300) and playback 315 Hz and 10 kHz.
2) Use the 315 Hz output level as a standard, check that the 10 kHz level is within ± 3 dB.

4. Checking Playback Sensitivity

Requirements

Test Tape: TTA-200 (400 Hz)

Test Point: Lch, Rch, GND

1) Insert the tape (TTA-200) and playback.
2) Check that the output level is within 900 mV ± 3 dB.

5. Adjusting the REC / PB Frequency Response

Requirements

Test Tape: TTA-602

Test Point: Lch, Rch, GND

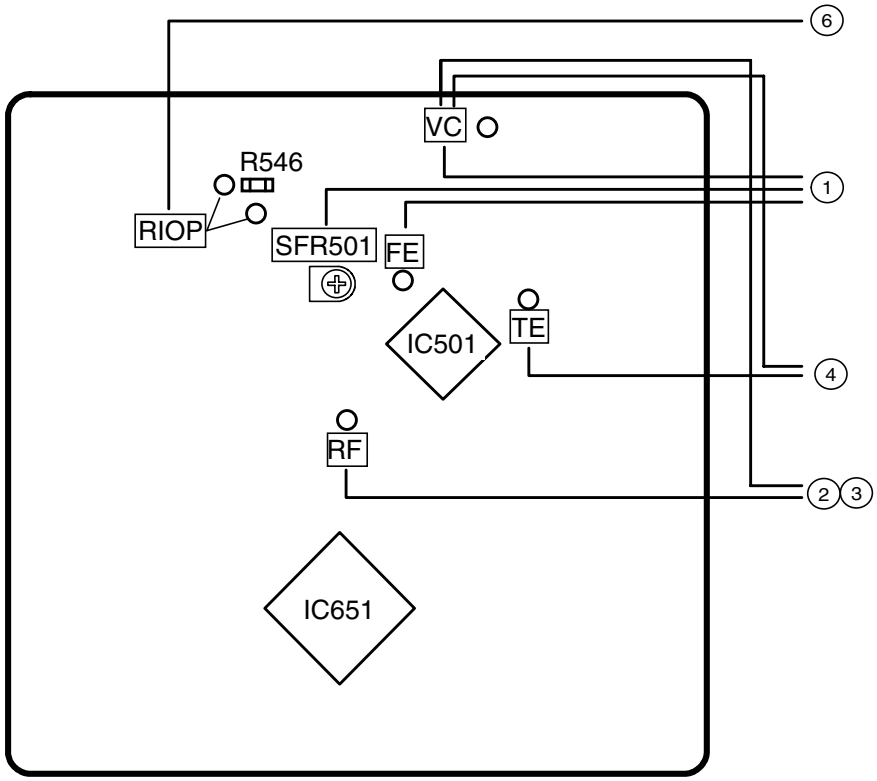
Input Point: AUX (1 kHz / 10 kHz)

Adjustment Point: SFR351 (Lch), SFR352 (Rch)

1) Set AUX for function and reduce attenuator output by 20 dB.
2) Insert the test tape (TTA-602) and record 1 kHz and 10 kHz alternately from AUX.
3) Playback the tape, adjust SFR351 (Lch) / SFR352 (Rch) until the playback output level of 1 kHz is within ± 1 dB according to the standard when the playback output level of 1 kHz is used as the standard.

<CD SECTION>

PWB CD

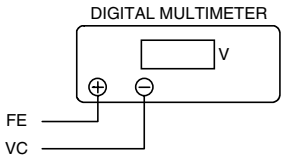


CD Adjustment Method

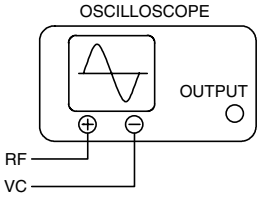
•Perform the adjustments after the machine enters the test mode.
•Place the CD mechanism on level ground.
•Equipment and tools required

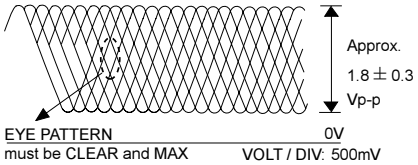
Measuring equipment: Oscilloscope (Use the probe of 10:1)
Digital Multimeter (Use it in the DC Volt range)
Jitter meter (Kikusui 6235)
Test Disc: TCD-782
ATD-001

1. Focus Offset Adjustment
   1) Connect a digital multimeter to the test point (FE), (VC).
   2) Play back the 2nd track of TCD-782.
   3) Adjust SFR501 until the digital multimeter indicates 0 ± 10 mV.

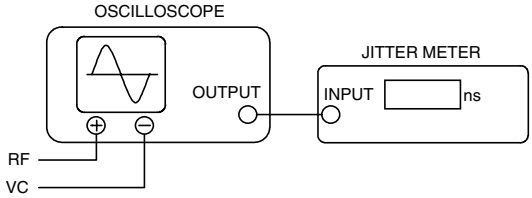


2. RF Waveform Check
   1) Connect an oscilloscope to test point (RF), (VC).
   2) Play back the 2nd track of TCD-782.
   3) Check that the RF waveform has the maximum amplitude and the center of the wedge waveform has the clear blank.



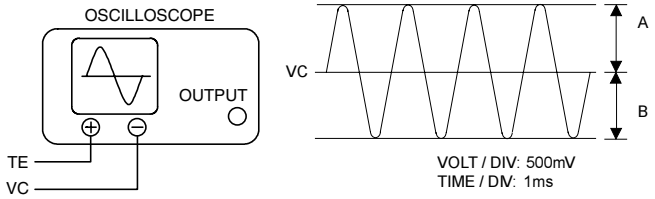


3. Jitter Check
   1) While an oscilloscope is kept connected in the same test point as in step 2. RF Waveform Check, connect the output terminal of an oscilloscope to the input terminal of the jitter meter.
   2) Set the VOLT range selector of an oscilloscope to 500 mV range or lower.
   3) Play back the 2nd track of TCD-782.
   4) Check that the jitter meter indicates 28.0 ns or less.



4. Tracking Balance Check

1) Connect the test point (TE), (VC) to the oscilloscope.
2) Playback the second track of TCD-782 and press the PAUSE button.
3) Check that the traverse waveforms of the oscilloscope are up and down symmetrical.



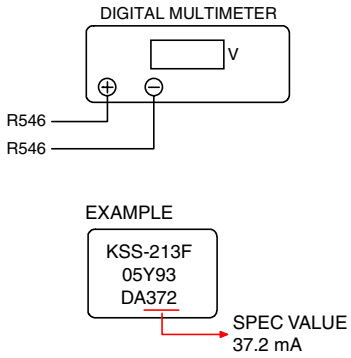
5. Play Ability Check

1) Play back the 3rd, 8th, and 13th track of ATD-001. Check that the noise does not occur and sound skipping does not occur.

6. Laser Current Check

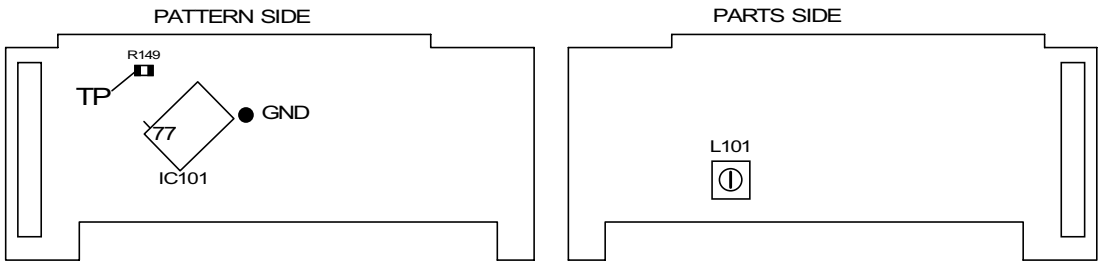
* Do not perform this measurement unless the laser is suspected to be defective.

1) Connect a digital multimeter across the resistor R546 (10 ohm).
2) Play back the TCD-782 and check the DC voltage value on the digital multimeter.
3) Calculate the laser current (Iop) by dividing the DC voltage across R546 by the resistor value (R546 = 10 ohm). Check that the laser current (Iop) is SPEC VALUE ± 10 %.



<FL SECTION>

PWB FL



1. Clock Adjustment

1) Connect an oscilloscope to test point OSC (IC101 77 pin) and GND (IC101 89 pin).
2) Insert the AC plug while pressing POWER and TUNER / BAND buttons.
3) Adjust L101 until the oscilloscope indicates 318.87 Hz ± 0.08 Hz (3.1352 ~ 3.1368 ms)

CD TEST MODE

1. How to Start the CD Test Mode

While pressing the CD FUNCTION button, insert the AC plug to the power outlet.
When the test mode started, the message [CD TEST] is displayed.

2. How to Exit the CD Test Mode

Press the POWER button or disconnect the AC plug.

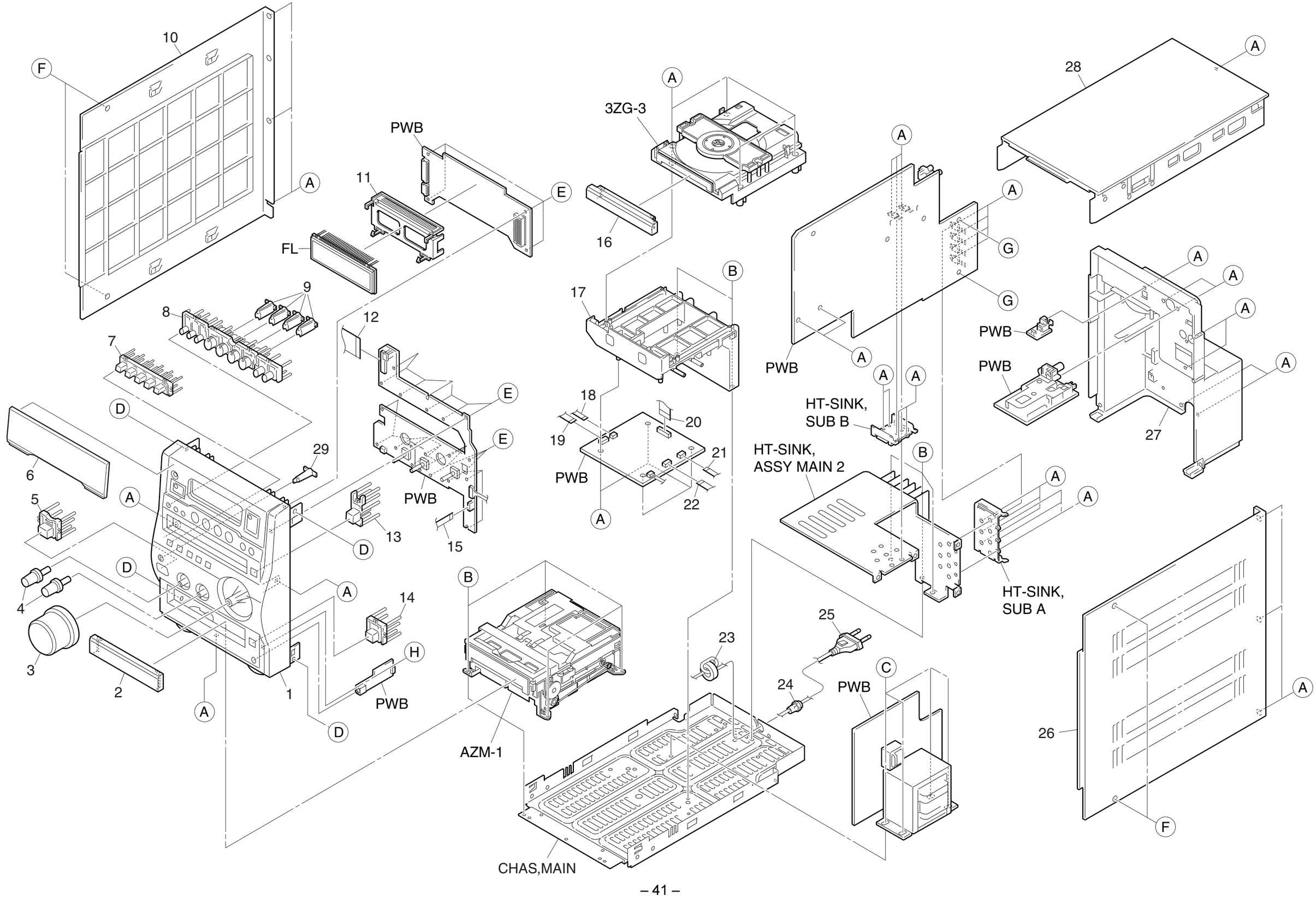
3. Function and Usage of the CD Test Mode

No	Mode	Button for Activation	Display	Operation	Contents
1	Start Mode		All lights are lit.		• Microcomputer check
2	Search Mode	STOP button	READING	• LD illuminates all the time • Focus search continues operations *1 • Spindle motor continuous kick	• APC circuit check • Laser current measurement • Focus search waveform check
3	Play Mode	PLAY button	Normal	• Normal playback • If TOC cannot be read, focus search is continued	• Each servo circuit is checked • DRF check
4	Traverse Mode	PAUSE button	Normal	• Tracking servo OFF/ON STOP button to cancel	• Tracking balance check
5	Sled Mode	FF button	CD TEST	• Pickup moves to the inner circumference *2	• Sled circuit check • Mechanism operation check • Pickup Check
		RWD button	CD TEST	• Pickup is moves to the outer circumference *2	

* 1. The driver IC heats up and the protection circuit starts working when the focus search is continued for 10 minutes or longer. There can be a case that operations cannot be performed correctly. In such a case, turn off the main power. After cooling down the machine, restart the machine.

* 2. Be careful not to damage the gear because the sled motor rotates while the FF or RWD button is being pressed even if the pickup is located in the innermost track or the outermost track.

MECHANICAL EXPLODED VIEW 1 / 1



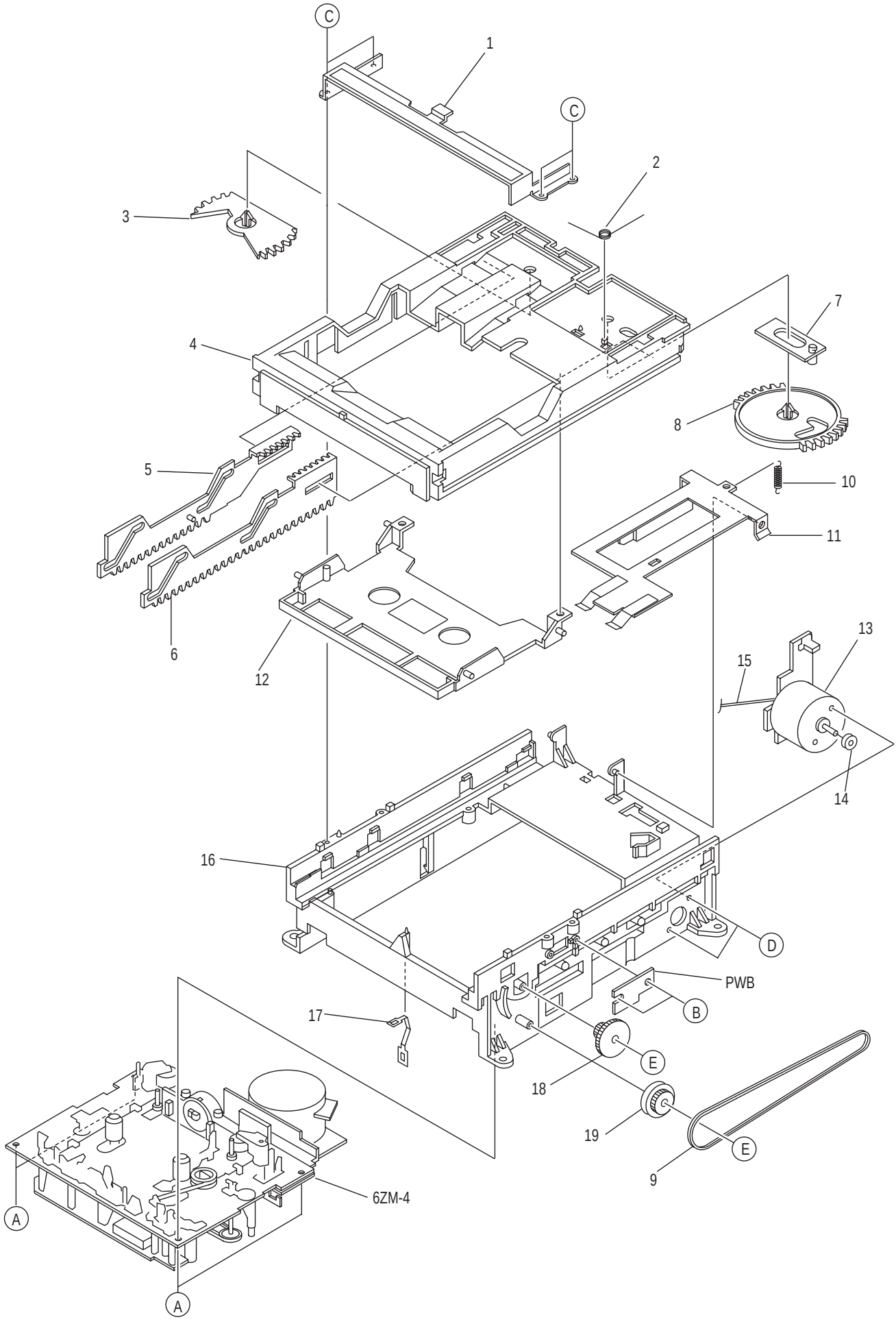
MECHANICAL PARTS LIST 1 / 1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8B-CLX-001-010		CABI,FR<EZ[S]>
1	8B-CLX-022-010		CABI,FR K<K[S]>
2	8B-CLX-008-010		PANEL,TRAY CASS
3	8B-CLX-010-010		KNOB,RTRY VOL
4	8B-CLX-011-010		KNOB,RTRY BT
5	8B-CLX-014-010		KEY,POWER
6	8B-CLX-009-110		WINDOW ASSY,DISP<EZ[S]>
6	8B-CLX-028-110		WINDOW ASSY,DISP K<K[S]>
7	8B-CLX-013-010		KEY,CONT
8	8B-CLX-012-010		KEY,FUNC
9	8B-CLX-018-010		REFLECTOR,FUNC
10	8B-CLX-004-110		PANEL,SIDE L
11	8B-CLX-203-010		HLDR,FL
12	88-923-091-110		FF-CABLE,23P 1.25 90MM
13	8B-CLX-015-010		KEY,EJECT CD
14	8B-CLX-016-010		KEY,EJECT CASS
15	88-905-231-110		FF-CABLE, 5P 1.25 230MM
16	8B-CLX-007-010		PANEL,TRAY CD
17	8B-CLX-202-010		CHAS,CD
18	88-905-131-110		FF-CABLE,5P 1.25 130MM
19	88-910-171-110		FF-CABLE,10P 1.25 170MM
20	8B-CLX-618-010		FF-CABLE,16P 1.0 150MM CD-PICK
21	88-906-081-110		FF-CABLE,6P 1.25 80MM
22	88-907-211-110		FF-CABLE,7P 1.25 210MM
23	87-003-317-010		F-BEAD,15-25-15 E2515MRT
24	87-085-185-010		BUSHING,AC CORD(E) CM-22B
⚠ 25	87-A80-157-010		AC CORD ASSY,E BLK CC
26	8B-CLX-005-110		PANEL,SIDE R
27	8B-CLX-002-010		CABI,REAR<EZ[S]>
27	8B-CLX-026-010		CABI,REAR K<K[S]>
28	8B-CLX-003-010		PANEL,TOP
29	8B-CLX-017-010		REFLECTOR,POWER
A	87-067-703-010		BVT2+3-10 W/O SL0T
B	87-B10-315-010		BVIT3B+3-8 R W/O
C	87-B10-318-010		BVIT3C+4-8 R W/O
D	87-721-096-410		QT2+3-10 W/O SLOT
E	87-B10-294-010		BVT2+2.6-8
F	87-067-761-010		BVT2+3-10 BLK
G	87-NF4-224-010		S-SCREW,IT3B+3-8 CU
H	88-AR1-217-010		S-SCREW,BFT2+3-8

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange	GM	Metallic Green
YM	Metallic Yellow	DM	Metallic Orange	PT	Transparent Pink
LA	Aqua Blue	GL	Light Green	HT	Transparent Gray
HM	Metallic Gray	NH	Champagne Gold	M	Wood Pattern

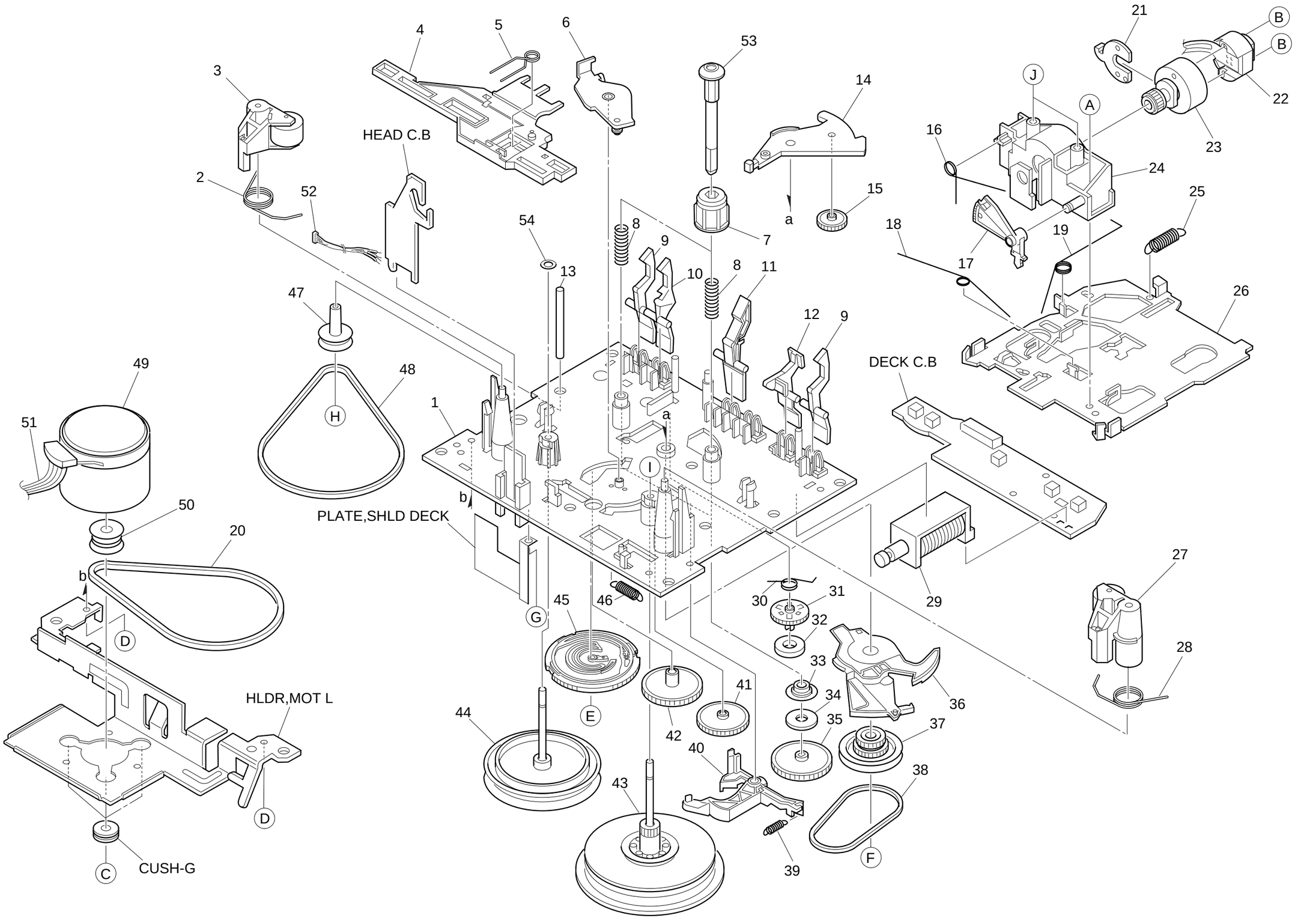
TAPE MECHANISM EXPLODED VIEW 1 / 2



TAPE MECHANISM PARTLIST 1 / 2

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8A-ZM1-214-010		PLATE,F STOPPER
2	8A-ZM1-223-010		SPR-T,LOCK F
3	8A-ZM1-209-010		GEAR,SLIDE B
4	8A-ZM1-233-010		FRAME,MAIN BL
5	8A-ZM1-215-210		LEVER ASSY,SLIDE L
6	8A-ZM1-217-010		LEVER ASSY,SLIDE R
7	8A-ZM1-212-010		LEVER,LOCK F
8	8A-ZM1-208-110		GEAR,SLIDE A
9	8A-ZM1-230-210		BELT,BASE
10	8A-ZM1-220-010		SPR-E,CLAMP
11	8A-ZM1-216-310		PLATE ASSY,CLAMP
12	8A-ZM1-234-110		TRAY,CASSETTE BL
13	87-045-305-010		MOTOR, RF-500TB DC-5V (2MA)
14	86-ZL1-210-010		PULLEY,MOT
15	8Z-ZG4-614-010		F-CABLE,2P 130MM LED
16	8A-ZM1-202-110		BASE,
17	86-ZL1-214-010		SPR-P,CASS
18	8A-ZM1-207-110		GEAR,FRAME
19	8A-ZM1-213-110		GEAR,PULLEY
A	87-067-660-010		TAPPING SCREW, BVT2+3-8
B	88-ZG5-302-010		S-SCREW,8ZG5+2-4 W/O
C	88-ZG5-317-010		S-SCREW,8ZG5S+2-4 W/O
D	87-251-072-410		U+2.6-5
E	8A-ZM1-240-010		S-SCREW,GEAR F/P

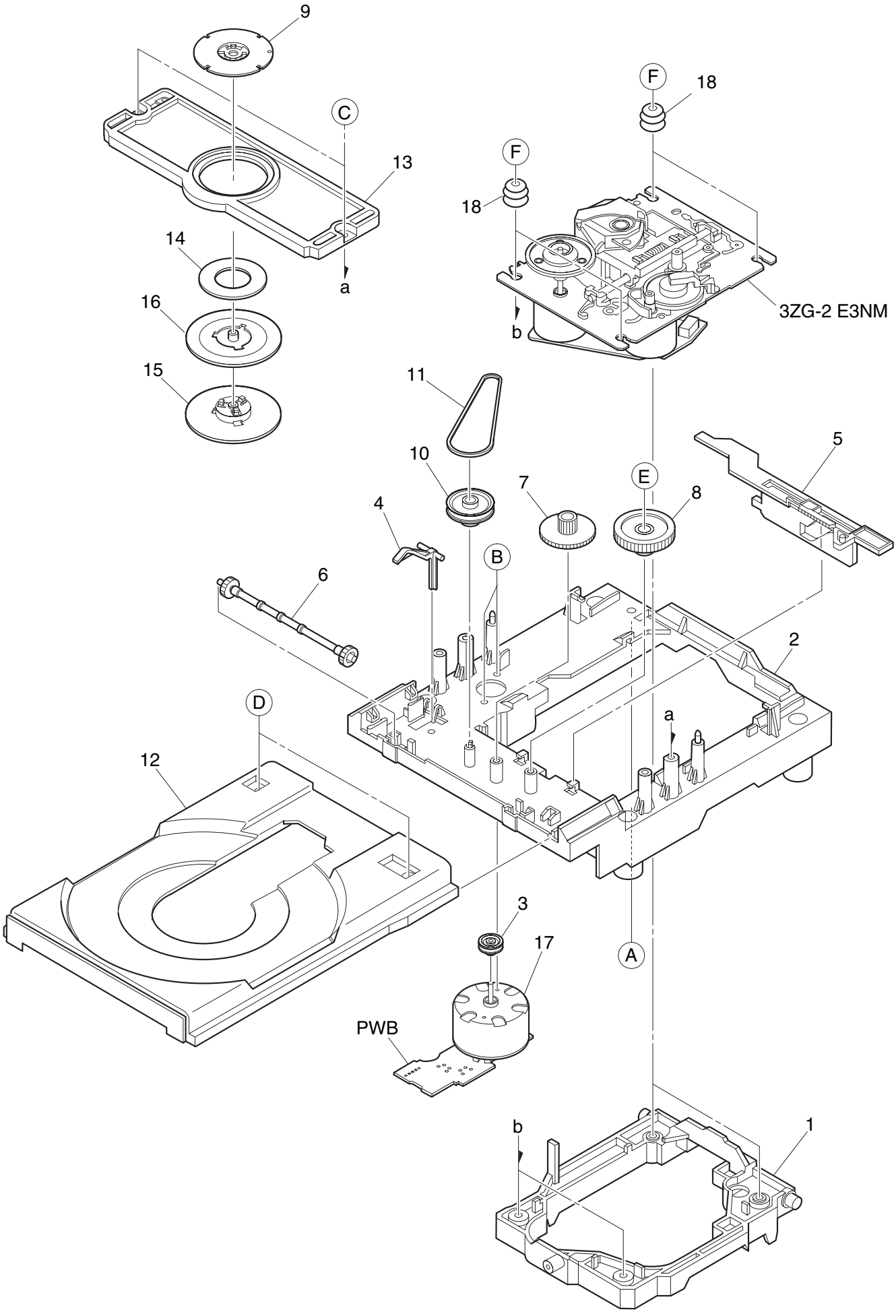
TAPE MECHANISM EXPLODED VIEW 2 / 2



TAPE MECHANISM PARTLIST 2 / 2

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	82-ZM1-358-010		CHAS ASSY,FPC
2	82-ZM1-258-210		SPR-T,PINCH L
3	82-ZM1-363-010		LEVER,ASSY PINCH LD
4	82-ZM1-266-310		LVR,DIR
5	82-ZM1-214-010		SPR-T,DIR
6	82-ZM1-333-210		PLATE,LINK2
7	86-ZM1-203-010		CAP,REEL
8	86-ZM1-221-010		SPR-C,BT 2L
9	82-ZM1-240-110		LVR,REC(*)
10	82-ZM1-241-310		LVR,MC
11	82-ZM1-242-010		LVR,CAS
12	82-ZM1-243-010		LVR,STOP
13	82-ZM3-339-110		SHAFT,COUPLER N3
14	82-ZM1-222-310		LVR,PLAY(*)
15	82-ZM1-223-010		GEAR,PLAY
16	82-ZM3-353-010		SPR-T,HEAD 2
17	82-ZM1-210-110		GEAR,H T
18	82-ZM1-269-210		SPR-T,BRG
19	82-ZM1-219-110		SPR-T,LINK
20	86-ZM1-217-110		BELT,MOT
21	82-ZM1-314-110		PLATE,HEAD
22	87-A92-197-010		HEAD,RPH HADKH5666A FPC
23	82-ZM1-208-310		HLDR,HEAD
24	82-ZM1-207-910		GUIDE,TAPE
25	82-ZM1-218-010		SPR-E,HB
26	82-ZM1-206-910		CHAS,HEAD
27	82-ZM1-362-010		LEVER,ASSY PINCH RD
28	82-ZM1-259-210		SPR-T,PINCH R
29	82-ZM3-628-010		SOL ASSY,23 SO
30	82-ZM1-322-010		SPR-T,FR 60
31	82-ZM1-220-210		GEAR,IDLER
32	82-ZM3-616-010		RING MAGNET 4
33	86-ZM1-219-010		CLR,REEL SLIP
34	86-ZM1-220-010		FELT,DIA 5.3-14-0.8
35	82-ZM1-216-510		GEAR,REEL
36	82-ZM1-224-410		LVR,FR
37	82-ZM3-333-310		SLIP DISK ASSY 2
38	82-ZM1-338-110		BELT,FR 4
39	82-ZM1-305-210		SPR-E,TRIG 2
40	82-ZM1-227-310		LVR,TRIG
41	82-ZM1-225-210		GEAR,FR
42	82-ZM1-226-010		GEAR,REW
43	86-ZM4-214-010		FLY-WHL ASSY,R4W
44	86-ZM4-215-010		FLY-WHL ASSY,L4W
45	82-ZM1-221-310		GEAR,CAM(*)
46	82-ZM1-255-310		SPR-E,LVR DIR
47	82-ZM3-335-310		PULLEY,COUPLER M3
48	86-ZM1-206-010		BELT,MAIN L
49	87-A90-343-010		MOT,SHU2R 70
50	82-ZM3-221-210		PULLEY,MOT 2M
51	86-ZM4-601-110		RBN-CORD,4P 300MM
52	86-ZM1-605-010		CONN ASSY, AR3
53	86-ZM1-202-010		SHAFT,REEL
54	82-ZM1-288-010		SH,1.63-3.2-0.5 SLT
A	85-ZM3-202-010		S-SCREW,TG
B	80-ZM6-207-010		V+1.6-7
C	82-ZM3-318-110		S-SCREW W,MOTOR M2
D	87-067-178-010		VTT+2.6-3
E	87-B10-008-010		W-P,2.08-8-0.4-SLIP
F	82-ZM3-334-010		PW 2.16-6-0.4
G	82-ZM3-222-010		S-SCREW,SHILD PLATE
H	87-B10-043-010		W-P,0.99-4-0.25 SLT
I	80-ZM6-243-010		SH 1.75-3.6-0.5 SLT
J	86-ZM4-206-110		S-SCREW,AZIMUTH L

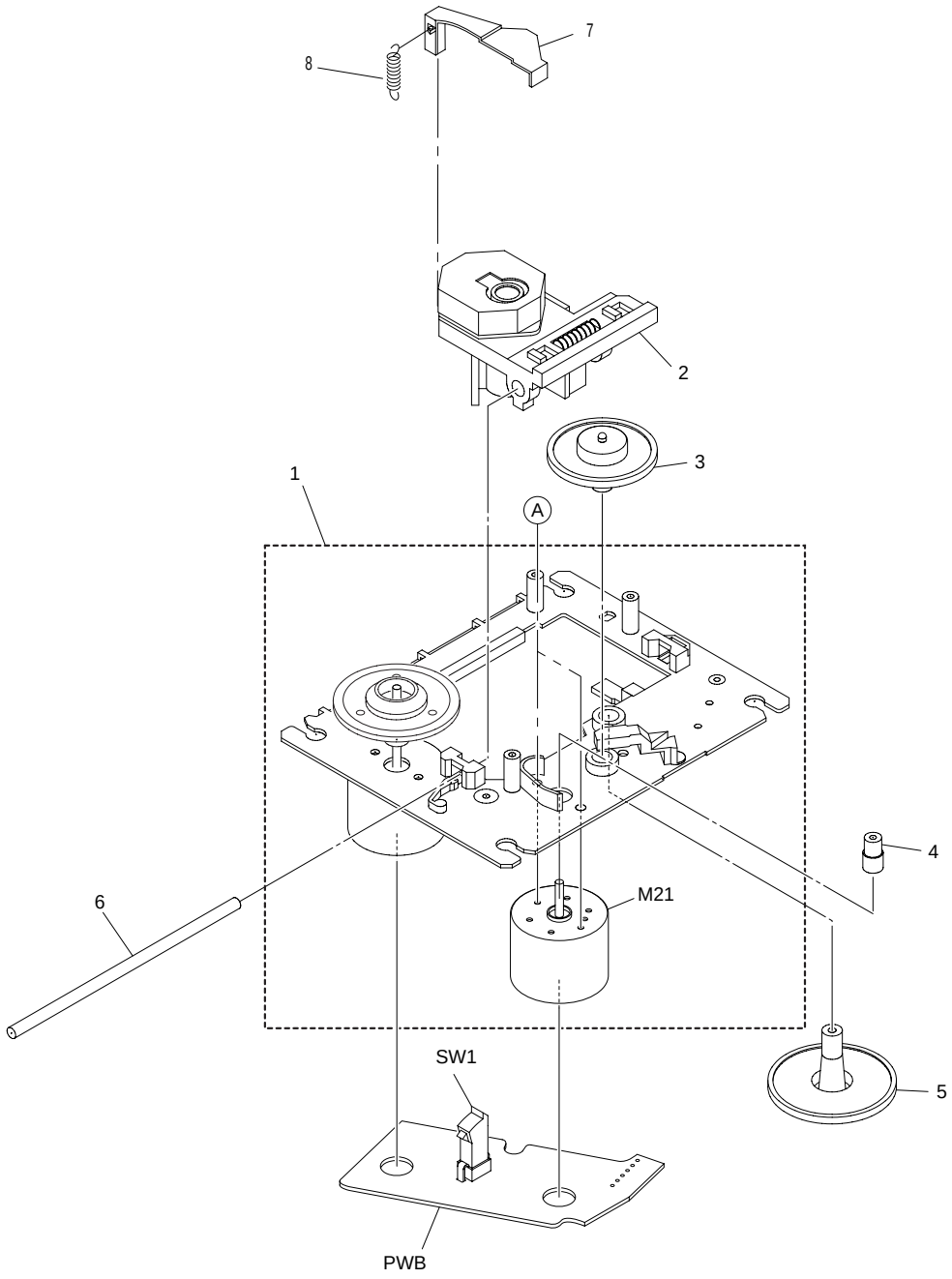
CD MECHANISM EXPLODED VIEW 1 / 2



CD MECHANISM PARTS LIST 1 / 2

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	83-ZG3-224-510		HLDR M2
2	83-ZG3-228-610		CHAS,L6
3	83-ZG3-208-010		PULLEY,MOTOR
4	83-ZG3-213-010		LVR,SW
5	83-ZG3-209-610		CAM,SLIDE
6	83-ZG3-207-010		GEAR,TRAY
7	83-ZG3-204-210		GEAR,C
8	83-ZG3-205-010		GEAR,D
9	83-ZG3-219-010		PLATE,CLAMP
10	83-ZG3-220-210		GEAR,PULLEY 2
11	83-ZG3-214-010		BELT,L
12	83-ZG3-231-210		TRAY,CD 3
13	83-ZG3-230-110		HLDR,CHUCK 2(*)
14	86-ZG1-239-110		PLATE,DISC PC
15	83-ZG3-604-010		RING,MAG 2
16	86-ZG1-238-010		HLDR,MAGNET 6ZG N
17	87-045-305-010		MOTOR, RF-500TB DC-5V (2MA)
18	83-ZG3-225-010		CUSH-G, MAIN A
A	87-067-945-110		VFT2+3-12(F10)
B	87-251-071-410		U+2.6-4
C	83-ZG3-235-010		VFT2+2.6-8
D	87-352-075-210		VT2+2.6-10
E	83-ZG3-217-010		S-SCREW,GEAR D
F	81-ZG1-254-010		S-SCREW,MECH HLDR

CD MECHANISM EXPLODED VIEW 2 / 2



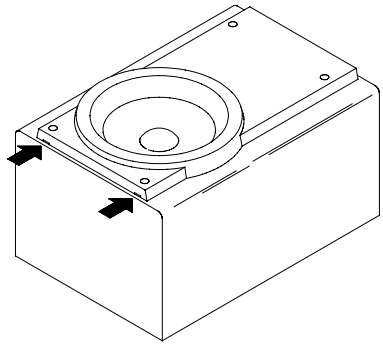
CD MECHANISM PARTS LIST 2 / 2

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	83-ZG2-262-010		CHAS ASSY,E3
2	87-A90-836-010		PICKUP,KSS-213F
3	83-ZG2-235-010		GEAR,A3
4	83-ZG2-236-010		GEAR,MOTOR 3
5	83-ZG2-205-310		GEAR,B
6	83-ZG2-253-010		SHAFT,SLIDE 5
7	83-ZG2-245-510		LEVER,SHUTTER(*)
8	83-ZG2-250-210		SPR-E,SHT 2
A	87-261-032-210		V+2-3

GENERAL SPEAKER DISASSEMBLY INSTRUCTIONS (FOR REFERENCE)

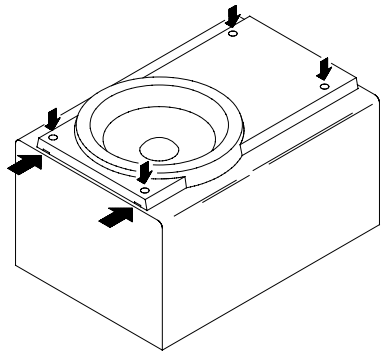
Type.1

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



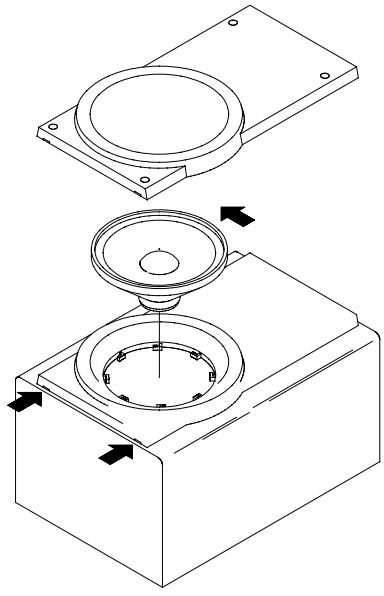
Type.2

Remove the grill frame and four pieces of rubber caps by pulling out with a flat-bladed screwdriver. Remove the screws from hole where installed rubber caps. Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.

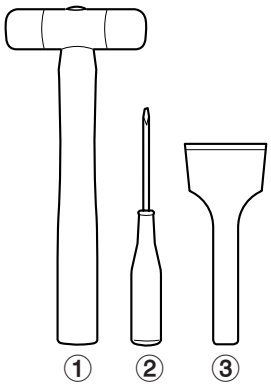


Type.3

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Turn the speaker unit to counter-clockwise direction while inserting a flat-bladed screwdriver into one of the hollows around speaker unit, and then remove the speaker unit. After replacing the speaker unit, install it turning to clockwise direction until "click" sound comes out.



Type.4



TOOLS

① Plastic head hammer
② (⊖) flat head screwdriver
③ Cut chisel

How to Remove the PANEL, FR

1. Insert the (⊖) flat head screwdriver tip into the gap between the PANEL, FR and the PANEL, SPKR. Tap the head of the (⊖) flat head screwdriver with the plastic hammer head, and create the clearance as shown in Fig-1.

2. Insert the cut chisel in the clearance, and tap the head of the cut chisel with plastic hammer as shown in Fig-2, to remove the PANEL, FR.

3. Place the speaker horizontally. Tap head of the cut chisel with plastic hammer as shown in Fig-3, and remove the PANEL, FR completely.

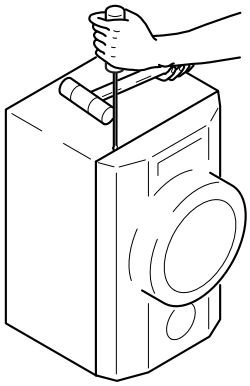


Fig-1

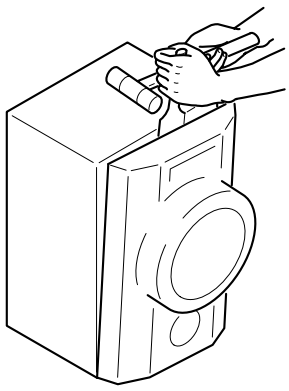


Fig-2

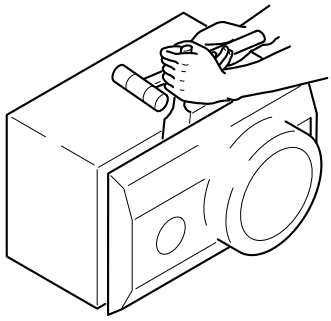


Fig-3

How to Attach the PANEL, FR

Attach the PANEL, FR to the PANEL, SPKR. Tap the four corners of the PANEL, FR with the plastic hammer to fit the PANEL, FR into the PANEL, SPKR completely.

SPEAKER PARTS LIST <SX – LEM70 (YJMN)>

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8B-CPX-002-010		RING,W
2	8B-CPX-003-010		RING,TW
3	8B-CPX-004-010		GRILLE,FRAME ASSY
4	8B-CPX-016-010		BADGE,AIWA 27.5
5	8B-CPX-602-010		SPKR,W 130 25/2
6	8A-CJ5-415-010		TERMINAL
7	8B-CP5-610-010		CORD,SPKR

ACCESSORIES / PACKAGE LIST

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8B-CLX-905-010		IB,K(E)M<K>
1	8B-CLX-906-010		IB,EZ(9L)M<EZ>
2	87-006-226-010		ANT,LOOP AM
3	87-A90-118-010		ANT,WIRE FM (Z)
4	8B-CLX-951-010		RC UNIT,RC-BAT15
⚠ 5	87-099-726-010		PLUG,ADPTR CONV (K)<K>

アイワ株式会社 〒110-8710 東京都台東区池之端1-2-11 ☎03(3827)3111 (代表)
AIWA CO.,LTD. 2-11, IKENOHATA 1-CHOME, TAITO-KU, TOKYO 110, JAPAN TEL:03 (3827) 3111

9301978 921338 Printed in Singapore